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OF THE

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OF THE

MEDICAL SCIENCES.

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JULY 1867.

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2. Third Report of the Commissioners appointed to inquire into the Origin and Nature of the Cattle Plague. London, 1866.
a. Microscopical Researches on the Cattle Plague. By Lionel S. Beale, M. B., F. R. S.
b. On Disinfection and Disinfectants. By R. Angus Smith, Ph. D., F. R. S.
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4. A Manual of Practical Hygiene, prepared especially for use in the Medical Service of the Army. By E. A. Parkes, M. D., F. R. S. Second edition. London, 1866.
5. Proceedings and Debates of the Third National Quarantine Convention, held in the City of New York. 1859.
6. Disinfection. By E. R. Squibb, M. D. Brooklyn, N. Y. (Report of the Committee on Disinfection to the Academy of Medicine.)

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7. Chemistry, Theoretical, Practical, and Analytical, as applied and relating to the Arts and Manufactures. By Dr. Sheridan Muspratt, F. R. S. E., M. R. I. A., F. G. S. Vol. I. p. 556. Art. "Disinfection."
8. Hints on the Control and Prevention of Infectious Diseases in Camps, Transports, and Hospitals. By Elisha Harris, M. D. Sanitary Commission Document, S.
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Clinical Memoirs upon Diseases of Women. By M. Gustave Bernutz and M. Ernest Goupil. Vol. I. pp. 610; Vol. II. pp. 771.
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2. Notes on the Progress of Acupressure. By Sir J. Y. Simpson, Bart., M. D., D. C. L., &c. 8vo. pp. 24. Edinburgh: Adam and Charles Black.
3. Medical Times and Gazette, 1865 and 1866, *passim*. 234

XXXIII. Behandlung der Croupoesen Pneumonie mit Veratrum-Præparaten. Von Dr. Theodor Kocher. 8vo. pp. 96. Würzburg, 1866.

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from Photograph by Kelly, N.Y.

Dr CARNOCHAN'S CASE OF ELEPHANTIASIS GRÆCORUM TREATED BY LIGATURE OF BOTH COMMON CAROTID ARTERIES

The Figure represents the patient before the operations and shows the Hypertrophied and diseased condition of the tissues of the head, face & neck.

from Photograph by Kelly, N.Y.

Represents the same patient: eight years after the ligature of the Common Carotid arteries, and the subsequent changes effected in the diseased tissues.

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR JULY 1867.

ART. I.—*Notes of Ninety-eight Cases of Epidemic Cerebro-spinal Meningitis, treated in the Philadelphia Hospital (Blockley) during the months of December*, 1866, *and January, February, and March*, 1867. By W. H. H. GITHENS, M. D. (Extract from Proceedings of "Association of Philadelphia Hospitals.")

DURING the winter that has just passed, our city has again been visited by an epidemic of cerebro-spinal meningitis, differing in some of its characters from that disease described by writers in the early part of the present century, and neither so virulent nor so fatal as that which devastated Manayunk and some neighbouring villages a few years since.

Our opportunities for observing the characteristics of this epidemic have been unusually favourable. The cases were treated in the Philadelphia Hospital, under the supervision of Drs. Stillé and Ludlow, the visiting physicians.

My earnest thanks are due to my fellow residents—especially to Drs. Orvis, Jenks, and Weightman, of the medical wards—for valuable and untiring assistance in collecting and arranging the data of the accompanying condensed statement, which embraces the accurate details of ninety-eight cases. Somewhat full histories are given of seven cases; these will serve to show the progress of the disease and the usual remedies employed.

CASE 1. George McLoughlin, æt. 47, a drayman, of intemperate habits, was admitted into the hospital December 4th at 4 P. M. He said he had been drinking for a few days, complained of feeling slightly unwell, had a pain in his head, and some slight feeling of nausea. He was sent to the out-wards. At 10 o'clock P. M. he was found wandering around, by the watchman; who, considering him drunk, took him to the drunkards' ward. He was slightly delirious all night, talking quietly about his family and business.

Dec. 5. 9 o'clock. Patient comatose; skin dry; temperature of axilla 101; pulse 126, very weak; tongue dry and coated, slightly brownish; head warmer than body; extremities cool; eyes tightly closed, marked photophobia, pupils very much contracted; corners of mouth drawn down; face darkly congested; respiration laboured and very noisy; on applying the ear to the chest, the bronchial sounds were dry and metallic; the chest and abdomen were thickly covered with an eruption, consisting of small, round, reddish-brown spots about one-quarter of an inch in diameter. The patient soon began to pass his discharges in bed, entirely involuntarily. Blisters were applied behind the ears and around the back of the neck; and whiskey and oil of turpentine given internally. 11 o'clock A. M. Stupor more marked; countenance stupid, heavy, and seems indicative of pain; pulse much weaker; respiration noisier, with flapping of lips and cheeks; four cut cups applied to the neck. 2 P. M. Pulse cannot be felt in the radial artery; bronchial sounds so loud as to mask entirely all heart sounds; they are perfectly dry and metallic in character; skin is slightly moist; body has the same general appearances; the spots on the abdomen are fading. 6¼ P. M. Died.

Post-mortem examination made seventeen hours after death.—Pupils natural size; the eruption has entirely disappeared from the chest and abdomen; all the dependent portions of the body hypostatically congested of a dark-brown or reddish colour.

Brain.—Vessels of pia mater, both veins and arteries, very much engorged; membranes thickened, adherent, and opaque; a large excess of a clear serous fluid in the ventricles, at the base of the brain, and within the membranes of the spinal cord. Section of the substance of the brain revealed numerous "puncta-vasculosa." The membranes of the cord were congested; no deposit of fibrin was discovered.

Lungs.—Heart, liver, spleen, kidneys, stomach, and intestines not particularly altered. Blood fluid, and of a dark muddy-brown colour.

CASE 2. Ann Ward, æt. 40, of intemperate habits, admitted December 12th. At the time was in a semi-comatose condition, but when called loudly by name, would open her eyes and turn her head slightly; face darkly congested; pupils contracted; chest, abdomen, and thighs thickly covered with a small petechial eruption, not at all raised, or disappearing on pressure; temperature in axilla 103° Fahr.; skin dry; head warmer than body; extremities cool. No "*calor mordax*," the skin feels simply warmer than natural. The patient lies in bed in any position in which she may be placed; discharges from rectum and bladder passed involuntarily; pulse entirely imperceptible. *Treatment.*—Blisters to temples and behind ears; four cut cups to back of neck; twelve dry cups along spine followed by frictions with oil of turpentine; vinum ergotæ ℥j every hour. A nurse was assigned to the patient and directed to feed her, whenever she could swallow, with a mixture of equal parts of milk and whiskey. The patient continued in this condition of stupor for seventy-two hours.

Dec. 15. 8 P. M. Begins to show some signs of consciousness; can be roused by a loud question; moves slightly in bed; the spots are beginning to fade; swallows with less difficulty; skin is cooler and more moist; a very thready pulse about 140 beats in the minute can be perceived. Ordered a mixture containing oil of turpentine ♏v, and ammon. carb. gr. v every two hours, one ounce and a half of whiskey in milk to be given every hour; discontinued the wine of ergot.

16*th*. 10 A. M. Pulse much improved, 120 to the minute; patient better in every respect; gives monosyllabic answers to questions, and notice of a desire to empty the bladder or rectum.

18*th*. 10 A. M. Pulse somewhat compressible, 90 to the minute; quite sensible, and much improved. At 3 P. M. pulse 100, bounding; face flushed; tongue coated, white; mouth dry and pasty; no delirium; dry and rude bronchial rales over chest; a white tough expectoration; whiskey reduced to half an ounce per hour. Ordered thirty ounces of beef-tea given in the twenty-four hours; blisters reapplied on temples, behind the ears, and back of neck; turpentine stupes over chest and down the spine, and a mixture of solution of acetate of ammonia and sweet spirits of nitre every hour. The febrile symptoms disappeared, and did not again recur. A large black slough which had been spreading for two or three days, on one of the nates, now showed signs of a line of demarcation; under the use of a poultice of cinchona, charcoal, flaxseed meal, and yeast, it was entirely removed in a few days, leaving an ulcer an inch and a half in depth and four inches in diameter; this was treated with a wash of creasote and carbonate of soda, and gradually filled up by granulations.

21*st*. Appetite improving, expresses a choice with regard to food; the thirst, from which she has been suffering for a few days, is abating; tongue cleaning off; bowels regular, and the feces have their proper characteristics; the face has assumed its natural appearance, the look of anxiety having all passed away; the petechiæ have entirely disappeared; pulse is hourly gaining in strength and volume; she still suffers slightly from bronchitis.

CASE 3. Charles Devlin, æt. 28, blacksmith, temperate, was taken sick on Nov. 30, with general feelings of uneasiness, loss of appetite, thirst, pain in the calves of legs gradually travelling upwards through the thighs and back until it reached his head.

Dec. 9. Small petechial spots over chest, abdomen, and thighs; suffers from pains, a buzzing in head, and great muscular depression and soreness; was not able to leave his bed after this date until transferred to hospital, Dec. 14, at which time he said the pain in his head resembled the compression of a band of iron; pain and tenderness in neck and along back; mind perfectly clear, although there is a slight deafness; face wears a peculiar anxious expression; corners of the mouth are drawn down; eyelids widely open, giving the eyes a staring appearance; patient watches very narrowly the motions of his attendants, moving the eyes to keep them in view, although the head remains in one position; tongue moist, with a slight white fur, clean at tip and edges; the thirst is very marked, resembling that of cholera; pulse 102, quite weak and compressible; respiration 33; temperature in axilla 103° F.; no epistaxis; bowels regular; urine passes freely, slightly darker than usual, but remaining perfectly clear and transparent; no opisthotonos. Blisters were applied behind the ears, cut cups to temples and back of neck, and ice bags to head and spine; a mixture containing one drop of tincture of veratrum viride in acetate of ammonia given every hour, with thirty-six ounces each of whiskey and Liebig's essence of beef during the twenty-four hours.

15*th*. Temperature fallen to 101°; pulse 86 and stronger; respiration 36; three soft stools yesterday; turpentine stupes applied over abdomen.

The symptoms all yielded quickly to remedies; in forty-eight hours the pain had been relieved and the icebags were removed. The thirst was now the most marked symptom; in consequence of constantly sucking pieces

of ice the tongue became brown and dry. Oil of turpentine in ♏v doses was given every two hours.

17*th*. Reduced the whiskey to twenty-four ounces daily.

18*th*. Stopped all the medicines and reduced the amount of whiskey to twelve ounces. Gave as a tonic nitro-muriatic acid, three drops, three times a day.

20*th*. The intolerable thirst is quite relieved; the patient is still very weak, and complains of deafness, and a constant ringing in ears; has forgotten many of the incidents connected with his sickness, such as the presence of his mother during his illness and other events which occurred during perfect consciousness.

The record of temperatures in this case shows a regular gradation from the time of his admission into the hospital until consciousness was fully established. The observations were made three times a day, 6 A. M., 12 M., and 6 P. M. The heat of body did not rise in the evening, but fell almost regularly from 103½°, which it was on the evening of the day of his admission, to 96¾°; from this point it rose again to 98° and did not again vary much.

The pulse followed the same regular course of improvement as did the temperature. The respiration continued more rapid than normal as long as he continued under observation.

Day of disease	15th		16th			17th			18th		
Time of day	10 A. M.	6 P. M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.
Respiration	33	34	36	28	32	20	28	32	28	24	24
Pulse	102	100	86	72	76	74	86	90	84	84	76
Temperature	103	103¼	101	101	101	101¼	101	100¼	99	98¾	98¼

Day of disease	19th			20th			21st		
Time of day	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.
Respiration	28	28	28	28	28	32	32		
Pulse	76	66	70	80	78	86	72		
Temperature	97	96¾	96¾	97	98	98¼	97¼		

CASE 4. Edward Green, æt. 36; intemperate habits. First felt unwell December 7, with loss of appetite; great thirst; slight diarrhœa (five passages daily, small, but thin and dark-coloured); occasional vomiting of bilious matter, with pain commencing in back, and progressing upwards towards the head.

Dec. 13. Admitted into hospital, in a state of intense nervous excitement; a universal tremor pervading the whole body; tongue tremulous when extruded; pain in head described as very intense, and located in the occipital and temporal regions. Complains of being unable to sleep day or night; pupils small; conjunctiva injected; whole eye prominent and staring; slight hyperæsthesia of skin; pulse 126, moderately full, but compressible; respiration 36, very irregular; temperature in axilla 103°; abdomen, chest, and thighs thickly covered with a reddish-brown petechial eruption.

Treatment.—℞. Tr. verat. vir. gtt. l; spts. æth. nit. fʒj; liq. ammon. acetat. fʒv.—M. Sig.—fʒj every hour. Oil turpentine ♏v every hour; blisters behind the ears; cut-cups to temples; three cut-cups to back of neck; twelve dry cups along spine; warm chamomile tea, and a hot-air bath by means of slaking lime in the bed; thirty-six ounces each of Liebig's essence of beef, and whiskey, were given during the twenty-four hours.

During the first five days of treatment the result in this case was very

doubtful; the pulse became more frequent and irregular, and less in volume, until it numbered 140 beats to the minute, and could be perceived with difficulty. The respiration continued frequent; the temperature varied between 101° and 103°, always rising towards evening. Each afternoon, from four to seven o'clock, the stomach could retain neither food nor medicine. It became necessary to draw off the urine by means of the catheter; the bowels continued to act regularly. On the twelfth day of the disease the first improvement was noticed in the strength of the pulse; and the stomach became more retentive. On the 13th the pulse had fallen to 106 beats in the minute. The temperature still continued high. At noon on the thirteenth day it stood at 103¼°, but from this point it fell regularly, keeping pace with the general progress towards convalescence. By the sixteenth day of the attack, convalescence may be said to have fully commenced. The thick white fur had cleaned off from the tongue; the appetite was improving, and all signs of cerebral irritation had been relieved, with one exception—the patient was very deaf, and continued so for some weeks after all other sequelæ of the disease had vanished.

Day of disease	7th		8th			9th			10th		
Time of day	10 A.M.	6 P.M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.
Respiration	36	28	24	28	28	32	36	32	40	28	36
Pulse	126	112	116	128	116	126	130	128	134	134	136
Temperature	103	103	101¼	101	103	102	102	102¼	102	100¼	101¼

Day of disease	11th			12th			13th			14th		
Time of day	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.
Respiration	28	32	32	36	36	36	32	32	36	32	36	24
Pulse	140	140	120	132	136	140	106	120	120	106	108	112
Temperature	101¼	101	101¼	101¼	102	102¾	102	103¼	102	100¼	101¼	101

Day of disease	15th			16th		
Time of day	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.
Respiration	24	28	32	24	24	20
Pulse	92	108	92	100	110	96
Temperature	101	98¼	99¼	99¼	97¼	98¼

CASE 5. Edward Davis, æt. 43; intemperate; admitted into hospital December 18. Complains of general *malaise;* pulse weak; expression stupid and heavy; petechial mottling on abdomen and thighs; no headache or pain in neck or back, or tenderness on pressure anywhere; no diarrhœa or constipation, or nausea, or epistaxis; free discharge of urine, normal in appearance. *Treatment.*—Blisters behind ears; stimulation with whiskey and oil of turpentine, and a good diet; and tinct. verat. vir. gtt. j every hour.

The symptoms of the disease were not well marked in this case, and no trouble was anticipated. Everything promised well for the first four days, when, perhaps in consequence of some nervous irritation, on Saturday, December 22d, the symptoms became more serious.

Dec. 23. Decided opisthotonos; pupils contract and dilate unequally; discharges from rectum and bladder involuntary; muttering delirium; tongue coated, white, and soft; general hyperæsthesia of surface. Applied cut-cups to temples and back of neck, and dry cups to spine. Reapplied blisters behind ears and around neck, and applied ice-bags to head and spine; increased the amount of whiskey to thirty-six ounces daily. At noon answered with difficulty when spoken to in a loud tone; occurrence

of nausea and vomiting; hands and feet becoming cool. Employed hot-air bath by means of lime.

24*th*. Opisthotonos continues; stupor more marked; temperature fallen to 92°; swallows with less difficulty. Used artificial warmth, and stimulation with oil of turpentine and aromatic spirits of ammonia.

Noon—Respiration very noisy; flapping of lips and cheeks; pulse almost imperceptible. Throughout the entire course the pulse could with great difficulty be counted. At 5 P. M. the patient died on seventh day of the disease.

Day of disease	3d			4th			5th			6th		7th
Time of day	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.	6 A.M.	12 M.	6 P.M.	12 M.	6 P.M.	6 A.M.
Respiration	28	32	28	24	24	24	20	24	28	28	24	24
Pulse	124	130	132	112	120	128	110		100	104	112	102
Temperature	98	100	101¼	99¼	100¼	99	99	98	99	98¼	96	92

CASE 6. John T. Davis, æt. 52; intemperate; admitted into hospital December 20, with general typhoid symptoms; slight diarrhœa; faintly marked petechial eruption; temperature 103¾°; pulse 120; respiration 40; face wearing the peculiar anxious expression previously described; eyes prominent and staring, and corners of mouth drawn down; a few rude and moist rales in various parts of chest. *Treatment*—Tinct. of iodine rubbed over chest; blisters behind ears; slight stimulation and nourishing food.

Dec. 22. The patient disturbed by the accident mentioned in Case 5. In the afternoon showed increasing febrile symptoms; tongue became dry and coated.

23*d*. Active delirium set in toward evening; the patient continued talking wildly all night.

24*th*. Cut-cups to temples and back of neck; blisters renewed behind ears and around neck; ice-bags to head and spine; whiskey increased to 36 ounces.

25*th*. The symptoms very much ameliorated, but to-night the patient seems weaker; extremities cool; temperature in axilla 101½°; pulse 142; directed artificial warmth to extremities, and an additional 8 ounces of whiskey during the night.

26*th*. Patient seemed much better this morning; the head symptoms all disappeared; perfectly rational; temperature 100; pulse 112. In the afternoon the pulse and respiration increased in rapidity. The eyes became lustreless from the stoppage of the lachrymal secretion. At 7 P. M. pulse could not be felt in the radial artery, nor the heart-sounds be heard by auscultation. At 9 P. M. the patient died.

Day of disease	3d	4th		5th		6th		7th		8th	
Time of day		6 A.M.	6 P.M.	6 A.M.	6 P.M.	6 A.M.	6 P.M.	6 A.M.	6 P.M.	6 A.M.	6 P.M.
Respiration	40	36	40	32	40		48	28	32	48	52
Pulse	120	108	120	104	120	98	98	86	142	112	152
Temperature	103¼	101¼	102¼	101¼	101¼		101	101	101¼	100	100

The post-mortem examinations of several cases revealed marked evidences of blood-poison, with inflammatory tendency. The membranes of the brain were congested; there was serum in large quantity in the sub-arachnoidean spaces, at the base of the brain, and within the membranes of the spinal cord. Fibrin was deposited along the margins of the longi-

tudinal fissure of the brain, about the commissure of the optic nerve; in fact, freely all over the base of the brain; and in one case it could be separated in masses weighing from three to five grains, from within the fissure of Sylvius, where it had firmly glued the two surfaces together. The quantity of this deposit of fibrin, its colour, consistence, and strength of attachment, were influenced chiefly by two causes observed during life. In some cases, where the inflammatory symptoms were of an active character, as shown by the congestion of face and eyes, the character of the pulse, and the violence of the delirium, death occurred early; and an autopsy showed little or no deposit of solid lymph, but a large quantity of serum, and in one case pus, in all the serous cavities connected with the brain and spinal cord, with turgescence of all the vessels of the pia mater and nervous substance. If, on the other hand, death did not intervene so quickly, there were deposits of fibrin, becoming larger, firmer, and more adherent in proportion to the grade of inflammatory action, and the time allowed for its coagulation. These deposits were of the same character as those found in the cavity of the abdomen after an attack of peritonitis. No particular lesion of the cord itself was noticed, the membranes were congested, and there were small deposits of fibrin about the roots of the spinal nerves. The erector-spinæ muscles were darker than normal, and softened. The blood was fluid; of the colour and appearance of port-wine lees; under the microscope, the corpuscles were shrivelled and crenated, and there was a space apparent between them as they were arranged in rouleaus. There were, in two cases, white, firm, fibrinous heart-clots extending through both ventricles and auricles, and into the vessels leading to and from the heart.

CASE 7. Julia Dillon, æt. 21, was delivered at full term, Jan. 25, 1867, by means of forceps, by Dr. Schofield. There were some slight symptoms of peritonitis, and the customary dose of castor-oil was withheld, and opium given to lock up the bowels. Jan. 29 it became necessary to draw off her water by means of the catheter.

Jan. 30. An eruption of an erythematous nature, appearing on the chest, with a distinct eruption of darker hue on abdomen and thighs, not disappearing entirely on pressure, with sloughing of the perineum; she was transferred to the surgical wards. She complained of pain in the head and in lower part of the abdomen; the latter was not very acute, and she bore considerable pressure with the finger without complaining; no pain or tenderness in neck or back, or stiffness of muscles anywhere; some slight emesis of matters of a greenish colour, thin, with coagulated milk and egg, which had been given her; pulse 130, quick and weak; slight but continual thirst, which water would not relieve; no heat of skin; hands slightly moist; pupils somewhat contracted, but eyelids very widely opened. *Treatment.*—Castor-oil and an injection to open bowels; frictions with hot oil to breasts to favour secretion of milk (the mammary glands were perfectly soft and flaccid, there had been no appearance either of milk or of the lochia); neutral mixture with sweet spirits of nitre, and poultices and hot water cloths over hypogastric and femoral regions to favour the discharge

of urine and the lochia. During the afternoon four passages from bowels were obtained, with a free secretion of urine; patient expressed herself as being much relieved; the pain had left her head entirely and the sense of fulness and weight in the abdomen was lessened. The pupils were still contracted, although no more opium had been given; there was tenderness over region of uterus and ovaries. Soon after midnight a hemorrhage, of about sixteen ounces, from uterus, occurred; this ceased without recourse to remedial agents, and relieved all remaining symptoms of peritonitis; the eruption still remained; if changed at all, it had become darker.

31*st*. Morning: Says she is more comfortable now than at any time since her delivery; has no pain or uneasiness anywhere, but there was occasional vomiting, and continued thirst; the applications to breast and hypogastric regions were still continued. At 3 P. M. complained of slight shifting pains in the lower part of abdomen and in both hypochondriac regions. At 10 P. M. signs of cerebral disturbance; abdomen swelled and somewhat tympanitic, but not very tender on pressure; neither milk nor lochia had yet appeared; tongue broad and slightly coated with white fur; pain in the head with general uneasiness and vomiting. The neutral mixture, which seemed to excite nausea, was stopped; a blister placed over stomach and suppositories, containing three grains of opium, were administered every four hours.

Feb. 1. 10 A. M. Semi-comatose; evidently suffering great pain; face darkly congested; pupils contracted; mouth dry and pasty; body bearing same marks as previously noted; bowels have not been opened since the operation by the purgative, thirty hours since; pulse quick, about 150 beats to the minute. Blisters were placed behind neck and over fundus of uterus. Later in the morning the coma deepened; the eyes became dry and rolled upwards; the patient recognized no one, and could not be roused by calling her name or by opening her eyes; remedies gave no relief; at 3 P. M. she died.

Post-mortem examination, eighteen hours after death, revealed effusion of serum within membranes of brain and spinal cord; deposit of fibrin along longitudinal fissure; congestion of the membranes and of the brain itself; softening of the brain substance; effusion of serum in pericardial sac; post-mortem clots in right ventricle; effusion of about sixteen ounces of serum into cavity of abdomen with deposit of coagulated fibrin in small amount on uterus, ovaries, and descending colon; this deposit was but slightly adherent; peritoneum whitened; intestines and stomach distended with gas; liver, lung, and kidneys healthy; mucous lining of vagina and neck of uterus with portions of labia and perineum had sloughed; blood dark in colour, and but partially coagulated.

CASE 8. Charles McCaskey, æt. 51; intemperate; from the city. Headache very severe. Admitted with a severe chill, profuse petechial eruption on face, chest, arms, legs, and back; large bed-sores; morbid vigilance, ending in coma; subsultus tendinum lasting for a week; bowels constipated; slight bilious vomiting; severe pains in neck, back, and limbs; strongly marked opisthotonos; excessive general hyperæsthesia; conjunctiva deeply congested, with photophobia and a secretion of pus; thirst insatiable; tongue pointed, dry, cracked, and tremulous, but coated with a thick, tenacious mucus; pulse small and feeble, varying from 120 to 150. Temperature max. 102¾°, min. 97½°—mean 100°. No complications, and whole time twenty-eight days. Sequelæ almost complete deafness and paralysis of left foot.

CASE 9. Jacob Freiley, æt. 45; intemperate; from out-wards. Headache very severe; slight delirium; bowels constipated; slight bilious vomiting;

muscular pains in neck and back; opisthotonos moderate; hyperæsthesia general; no eruption; marked congestion of the conjunctiva; insatiable thirst; tongue coated with a soft white fur, but clean at tip and edges; pulse strong and irritable, varying from 116 to 120. Temperature max. 105°, min. 101½°, mean 103°. Complicated with bronchitis. Duration of prodromes five days. Death on twelfth day from choking up of bronchial tubes with thick mucus.

CASE 10. John O. Donnell, æt. 35; temperate; from city. Violent headache; no delirium; constipation; severe and general muscular pains; eruption of erythema and urticaria; slight congestion of conjunctiva; thirst severe; tongue coated, white, and soft; clean at tip and edges; pulse 96 to 62, quite feeble; temperature from 99° to 99½°. No complications. Duration of prodromes five days; whole time sixteen days. The active symptoms were anticipated by local depletion, and the case aborted.

CASE 11. Arthur Dalton, æt. 30; temperate; ward assistant. Violent headache; slight delirium; diarrhœa; general petechial eruption; conjunctiva very much congested; thirst slight, but constant; tongue dry and brown; pulse 88 to 134, barely perceptible. Temperature max. 104½°, min. 97¾°, mean 102½°; twelve days of prodromes. Died on twenty-third day. For the first fortnight this case had all the symptoms of well-marked typhoid fever, with the exception of the eruption, which was petechial in character from the first. Stupor and coma were constant for several days before death.

CASE 12. George Chambers, æt. 45; temperate; from city. Violent headache; no delirium; diarrhœa; severe and general muscular pains; no eruption; conjunctiva congested; thirst severe; tongue coated with white soft fur, clean at tip and edges; pulse 62 to 80. Temperature 99°; five days of prodromes; whole time eight days; aborted by treatment early; sequela deafness.

CASE 13. Mary Peterson, æt. 45; temperate; an inmate of the insane department for twelve years. No communication with any other case. First noticed in a collapse of three hours' duration. Symptoms were congestion of eyes; the right pupil contracted, the left dilated, and appeared to dilate more under influence of light. Coma, with laboured, stertorous respiration; apparently severe headache; constipation; no eruption; tongue coated with thick white fur, clean at tip and edges. Lips were dry and cracked; pulse varied from normal to 180; very feeble; skin hot and dry. Died in forty-three hours. Post-mortem examination revealed very extensive deposits of fibrin at base of brain; about five ounces of serum at base of brain; spinal cord congested, with deposit of fibrin beneath the arachnoid. A small quantity of pus around the cord in the cervical region.

CASE 14. Robert Bartlett, æt. 26 (coloured). Severe headache; alternate diarrhœa and constipation; nausea; slight opisthotonos, with subsultus; slight hyperæsthesia over abdomen; conjunctiva much congested; intense thirst; tongue at first white, soft fur with clean tip and edges; fur afterwards became dry and brown; pulse feeble, 86 to 72. Temperature max. 102½°, min. 98°, mean 101°. Complicated with bronchitis. Twelve days of prodromes; convalescent in eighteen days.

CASE 15. Henry Washington (coloured), æt. 22; temperate; from out-wards. Severe headache; talkative delirium; constipation; bilious vomiting; muscular pains in arms and legs; back of neck stiff and sore; slight opisthotonos; no eruption; marked congestion of conjunctiva, with suffusion; intense thirst; tongue coated with moist white fur, clean tip and edges; pulse 96 to 120, feeble. Temperature max. 104¾°, min. 97½°, mean 102. Complicated with pneumonia of right side; seven days of prodromes. Died on twenty-first day, of exhaustion. Post-mortem examination of brain and cord showed results of high inflammatory action.

CASE 16. George Brown (coloured), æt. 20; temperate; from city. Moribund when brought into hospital. No history obtained. Constipation; great congestion of conjunctiva; insatiable thirst; tongue coated with white soft fur,

clean tip and edges; feeble pulse 110 to 120. Temperature 101° to 103°. Complicated with double pneumonia and free epistaxis. Although no symptoms of meningitis could be detected, with the exception of the peculiar expression of countenance, yet large quantities of lymph were found along the longitudinal sinus, and at the base of the brain, with considerable arachnoidean effusion.

CASE 17. Alfred Johnson (coloured), æt. 23; from prison. In medical ward three days. Severe headache; walking and talking delirium; constipation; slight opisthotonos; conjunctiva slightly congested; slight thirst; tongue dry and brown; pulse feeble, 100 to 110. Temperature 101°. Died on the eighth day of disease. Marked deposits of fibrin.

CASE 18. Robert Nickerson (coloured), æt. 45; temperate; from Seventh and Bedford Streets. Severe headache: talkative delirium; constipation; bilious vomiting; muscular pains were unusually severe; marked opisthotonos, body forming an arch; subsultus tendinum; general hyperæsthesia, screaming when touched; pain on pressure along entire length of vertebral column; conjunctiva congested; thirst intense; tongue dry and brown; pulse 110 to 130, very feeble. Temperature 101°. Four days' prodromes. Died on the eleventh day.

CASE 19. William Smith (coloured), æt. 35; temperate; from prison. Slight headache; constipation; muscular pains in the neck with stiffness of back; slight hyperæsthesia; conjunctiva slightly congested; severe thirst; tongue coated with moist white fur, clean at tip and edges; pulse 76 to 112, very feeble. Temperature 100°; two days' prodromes; whole time seven days. Aborted by early treatment.

CASE 20. John Cook (coloured), æt. 22; temperate; from the city. Severe headache; constipation; muscular pains in neck and back, with stiffness of legs and back; slight hyperæsthesia; marked congestion of conjunctiva; severe thirst; tongue moist, white fur, clean at tip and edges; pulse 76 to 104, feeble. Temperature 99°. Complication, pharyngitis. Ten days' prodromes; convalescent on fourteenth.

CASE 21. Richard Eddy (coloured), æt. 42; intemperate; from the city. Slight headache; constipation; bitter taste in mouth; pain on pressure over sixth cervical and second dorsal vertebræ; decided congestion of conjunctiva; slight thirst; tongue coated with moist white fur, and clean tip and edges; pulse 76 to 112, quite feeble. Temperature 100°. Duration five days; aborted by treatment.

CASE 22. Charles Donald, æt. 58; intemperate; from out-wards. Wild delirium; severe headache; constipation; nausea, general muscular pains; decided opisthotonos; eruption of erythema and petechiæ; marked congestion of conjunctiva; severe thirst; tongue dry and brown; pulse 74 to 130; temperature 101½°. Died on the twelfth day.

CASE 23. George Parker, æt. 24; temperate; from out-wards. Headache intense; bowels constipated; muscular pains in neck and back; slight opisthotonos; slight but general hyperæsthesia; petechial eruption; marked congestion of conjunctiva; severe thirst; tongue dry and brown, with red tip and edges; pulse 92 to 146; temperature 98° to 103½°; repeated epistaxis; eight days of prodromes; duration of attack fourteen days.

CASE 24. Louis Missing, æt. 26; temperate; was in the ward ten days. Comatose the whole time; bowels constipated; slight muscular pains in the neck; marked opisthotonos; slight but general hyperæsthesia; no eruption; marked congestion of conjunctiva; tongue dry, brown, and fissured; pulse 98 to 140; temperature 96° to 104°. Died.

CASE 25. John Davis, æt. 54; intemperate; from prison. Headache intense; bowels constipated; muscular pains in legs and arms; decided opisthotonos; hyperæsthesia marked over abdomen; pain on pressure over entire vertebral column; petechial eruption; conjunctiva congested; intense thirst; tongue dry

and brown; pulse imperceptible; temperature 103°. Died in thirty-six hours after admission.

CASE 26. John Anderson, æt. 21; temperate; from the city. Slight delirium; slight headache; constipation; bilious vomiting; marked opisthotonos; slight hyperæsthesia; no eruption; conjunctiva congested; slight thirst; tongue coated with a moist white fur with clean tip and edges; pulse 72 to 112; temperature 97° to 104½°; profuse epistaxis; complicated by a relapse. Three days of prodromata; convalescent in twenty-seven days.

CASE 27. Peter Carney, æt. 20; temperate; from city. Severe headache; constipation; stiffness of back; slight hyperæsthesia; erythematous eruption; congestion of conjunctiva; intense thirst; tongue coated in centre with soft white fur, clean at tip and edges; pulse 72 to 106; temperature 96° to 104°; slight epistaxis; convalescent on fifteenth day; five days of prodromes.

CASE 28. John Hart, æt. 44; intemperate; from prison. Slight delirium; continued intense headache; constipation; muscular pains in limbs; decided opisthotonos, with continued stiffness; eruption slightly petechial; marked congestion of conjunctiva; intense thirst; dry glazed tongue; pulse 88 to 112; temperature 98° to 101°; repeated epistaxis; convalescent in eight days.

CASE 29. Edward Shields, æt. 26; intemperate; from city. Active delirium; severe headache; constipation; bilious vomiting; muscular pains in limbs and back; slight hyperæsthesia; an erythematous eruption; slight congestion of conjunctiva; slight thirst; tongue coated with moist white fur, clean at tip and edges; pulse 86 to 120; temperature 97° to 103°; complicated by delirium tremens; convalescent on fourteenth day.

CASE 30. Hugh Finnegan, æt. 21; temperate; from the city. Muttering delirium; severe frontal headache; constipation; muscular pains in neck; marked opisthotonos; slight hyperæsthesia; eruption of erythema and petechiæ on face only; marked congestion of conjunctiva; intense thirst; tongue coated with moist white fur, but clean at tip and edges; pulse 68 to 120; temperature 97° to 104°; convalescent on seventeenth day.

CASE 31. William Smith, æt. 67; temperate; from city. Slight headache; constipation; eruption of erythema and petechiæ; marked congestion of conjunctiva; severe thirst; tongue coated with moist white fur, clean tip and edges; pulse 76 to 120; temperature 97° to 102°; convalescent on tenth day; convalescence rapid; but the deafness was quite persistent.

CASE 32. Richard Healy, æt. 22; temperate; ward assistant. Talkative delirium; severe headache; constipation; bilious vomiting; slight muscular pains; slight opisthotonos; marked hyperæsthesia; pain on pressure over seventh dorsal vertebra; eruption of erythema and petechiæ, appeared on sixth day; marked congestion of conjunctiva; intense thirst; dry and brown tongue; pulse 72 to 120; temperature 96° to 104½°; epistaxis profuse; convalescent on twentieth day.

CASE 33. Henry Sinclair, æt. 17; temperate; from surgical wards. Severe headache; constipation; bilious vomiting; muscular pains in neck and back; marked and general hyperæsthesia; no eruption; slight congestion of conjunctiva; slight thirst; tongue coated with moist white fur, but clean at tip and edges; pulse 76 to 126; temperature 97° to 103°; aborted by treatment; convalescent on fifth day.

CASE 34. Anthony Thomas, æt. 46; from city. Severe headache; constipation; muscular pains in neck and back; marked and general hyperæsthesia; petechial eruption; slight congestion of conjunctiva; slight thirst; tongue coated with moist white fur, but clean at tip and edges, afterward dry and brown; pulse 125; died on third day after admission.

CASE 35. John McGinnis, æt. 30; temperate; from city. Intense headache; constipation; bilious vomiting; muscular pains in neck and limbs; marked opisthotonos; marked hyperæsthesia; pain on pressure over second and third

dorsal vertebræ; petechial eruption; marked congestion of conjunctiva; intense thirst; tongue coated with moist white fur, clean at tip and edges; pulse 80 to 120; temperature 97° to 103°; epistaxis; convalescent on twenty-second day, with deafness.

CASE 36. James Cox, æt. 36; intemperate; from out-wards. Constipation; bilious vomiting; general muscular pains; slight hyperæsthesia; pain on pressure over sixth dorsal vertebra; eruption of erythema and petechiæ; slight congestion of conjunctiva; intense thirst; dry and brown tongue; pulse 112 to 120; temperature 94° to 104°; incontinence of urine; profuse epistaxis; death in convulsions on eleventh day.

CASE 37. John Greiner, æt. 46; temperate; a paralytic. Slight headache; constipation; muscular pains in back of neck; slight petechial eruption; slight congestion of conjunctiva; intense thirst; dry and brown tongue; pulse 68 to 96; temperature 97° to 105¼°; convalescent on eighth day, with sequelæ of carbuncles.

CASE 38. Mary Asholder, æt. 23; temperate; from out-wards. Talkative delirium with inclination to leave her bed; severe shooting headache; constipation; bilious vomiting; muscular pains in neck and body; marked opisthotonos; slight hyperæsthesia; petechial eruption; marked congestion of conjunctiva; insatiable thirst; tongue moist, white, &c., but afterwards dry and brown; pulse 102 to 120; complicated with double pneumonia and pericarditis; convalescent on thirteenth day, with quite persistent deafness.

CASE 39. Thomas Hanley, æt. 22; from venereal ward. Heavy and dull, but no delirium; severe frontal headache; bowels regular; nausea, but no vomiting; muscular pains in limbs and neck; pain on pressure over third dorsal vertebra; eruption of urticaria on seventh day with petechiæ; conjunctiva injected; thirst severe; tongue coated with moist white fur, but red at tip and edges; pulse 70 to 106; temperature 97° to 104°; convalescent on fourteenth day.

CASE 40. Francis Hagen, from city. Sent to drunkards' ward. Stupid throughout the day, but delirium active at night; ataxic symptoms well marked; severe frontal headache; vomiting during the first two or three days; muscular pains in legs, body, and neck; opisthotonos quite marked; petechial eruption; conjunctiva injected; thirst severe; tongue coated, white, and soft at first, afterwards dry, brown, and fissured; pulse 80 to 130; temperature 99° to 104°; complicated by delirium tremens, consequent on a long debauch. Convalescent on fourteenth day, with annoying deafness and stiffness of legs.

CASE 41. Michael Harkins, æt. 21; from Second and South Streets. This case was exceedingly difficult to distinguish from typhus; there were at the time no cases of typhus reported from the city. The condition of intellect resembled typhus; headache continuous; some diarrhœa during attack; vomiting at commencement; slight muscular pains; petechial eruption; eye natural; thirst slight; tongue at first red, with white edge, becoming dry and cracked; pulse 72 to 120; temperature 96° to 104½°; complicated with circumscribed pneumonia coming on in the second week. Convalescent on twentieth day.

CASE 42. Michael Rodman, æt. 31; from northern suburbs of city. Heavy and soporose through the day, but noisy at night; headache very severe; constipated at commencement of attack; muscular pains in limbs and back of neck; stiffness of back; petechial eruption; eye injected; thirst severe; tongue at first red and soft, but afterwards dry and brown; pulse 90 to 120; temperature 99° to 104½°; complicated by delirium tremens. Convalescent in four weeks. An obstinate dull aching pain remained in forehead; relieved by blisters and potass. iodidi, but not entirely disappearing; deafness and loss of memory.

CASE 43. William Brown, æt. 13; from Seventh and Bedford Streets. Intelligence good at first, delirium and coma afterwards; severe headache; bilious vomiting; muscular pains severe in legs; petechial eruption; eye injected; thirst severe; tongue red and soft at first, afterwards dry and brown; pulse 120 to 140; temperature 100° to 104½°; complicated with scrofulous diathesis; white

swelling of knee. In this case a true exanthem, disappearing wholly under pressure, preceded the petechial eruption. Death on the tenth day by sudden collapse.

CASE 44. William Mitchell, æt. 27; from Seventh and Bedford Streets. Had been on a debauch; active delirium at night; severe frontal headache; diarrhœa; muscular pains in legs: severe pain in neck; petechial eruption; eye injected; thirst severe; pulse 90 to 120; temperature 98° to 103°; complicated with bronchitis. Convalescent in three weeks, with deafness and loss of memory.

CASE 45. Gustav Martin, æt. 30; from Front and Brown Streets. Delirium in second week; severe frontal headache; diarrhœa at first; muscular pains severe in neck, back, and legs; slight opisthotonos; copious eruption: exanthem changing to petechia; eye congested; constant and distressing thirst; tongue becoming dry and brown and bleeding; pulse 120; temperature 97° to 103°; Convalescent in four weeks; deafness, loss of memory, and deep sloughing bed-sores.

CASE 46. Henry Murphy, æt. 21; from Wheeling. Had felt unwell before leaving there; spent one night in a station-house and then came to the hospital; slight nocturnal delirium; severe frontal headache; diarrhœa; bilious vomiting; muscular pains, especially in neck; could not flex the head so as to touch the chin to the breast; slight hyperæsthesia; copious petechial eruption; injected eye; slight thirst; tongue dry, brown, and bleeding; pulse 80 to 120. Convalescent in four weeks, with deafness and loss of memory.

CASE 47. William Riggs (coloured), æt. 25; from Fifth and South Streets. Noisy at night; frontal headache; diarrhœa; bilious vomiting; muscular pains, especially in the neck; pain in putting chin to breast; eye injected; slight thirst; tongue brown, dry, and bleeding; pulse 136; temperature 98° to 104¾°. Convalescent in three weeks.

CASE 48. John Robinson (coloured), æt. 27; from prison. Slight delirium; severe headache; constipation; obstinate bilious vomiting; muscular pains, with syphilitic osteocopic pains, making it difficult to decide which were caused by the disease; eye injected; tongue red and moist through attack; pulse 100; was ptyalized before admission. Convalescent in three weeks.

CASE 49. John O'Neill (coloured); from out-ward. Talkative at night; severe headache; nausea; pain in neck and stomach; eye congested; slight thirst; tongue dry and yellow; temperature 97⅛° to 102°; convalescent in three weeks. The parotid glands were inflamed and suppurated; the right opened spontaneously into the ear; the left was lanced—very free discharge; deafness.

CASE 50. Samuel Green (coloured); temperate; from Sixth and Lombard Streets. Frontal headache; severe pain in neck; eye congested; slight thirst; tongue dry and coated; pulse 120, soft and compressible. An abortive attack, entirely convalescent in three weeks.

CASE 51. John Brown, from Bedford Street. Frontal headache; pains in head, back, shoulders, and legs, and on pressure over third dorsal vertebra; eye injected; slight thirst; dry tongue; pulse 120. Convalescent in three weeks.

CASE 52. John Carter, æt. 20; from Bedford Street. Slight delirium, and headache; general muscular pains, especially in neck; slight opisthotonos; eyes injected; slight thirst; tongue dry and brown. Convalescent in three weeks, with deafness, and purulent discharge from both ears.

CASE 53. Margaret Hall, æt. 29; temperate; from Kensington. Slight headache; constipation; bilious vomiting; muscular pains in limbs, back, and neck; an eruption of erythema and petechiæ; conjunctiva highly congested; severe thirst; tongue moist, brown, fur on edges, clean in centre; pulse 80 to 130. Convalescent on sixteenth day.

CASE 54. Mary Gibson, æt. 61; temperate; from out-wards. Slight muttering delirium; severe headache; diarrhœa; neck stiff and sore; slight opisthotonos;

slight and general hyperæsthesia; petechial eruption on face, body, and upper extremities; eyes slightly congested; intense thirst; tongue dry and brown, with clean edges; pulse 88 to 104. Convalescent in fifteen days.

CASE 55. Cecelia Bee, æt. 40; temperate; from Eighth and Fitzwater Streets. Wild, raving delirium; slight headache; constipation; muscular pains in neck, arms, and legs; eruption of erythema and petechiæ; slight congestion of conjunctiva; around cornea of right eye, beneath the conjunctiva, occurred a large effusion of blood, disappearing during convalescence; intense thirst; tongue soft, with white fur, clean at tip and edges; bitter taste in mouth; pulse 88 to 110; complicated with pneumonia of right side. Convalescent on twenty-sixth day, with persistent deafness.

CASE 56. Margaret Somerville, æt. 27; temperate; from out-wards. Intense, constant headache; constipation; bilious vomiting; muscular pains all over, but intense in neck; slight opisthotonos; slight petechial eruption; marked congestion of conjunctiva; insatiable thirst; tongue coated with soft white fur, but clean at tip and edges; pulse 96 to 100. Convalescent on seventeenth day.

CASE 57. Ann Danlan, æt. 40; temperate; from Ninth and Cherry Streets. Headache severe in forehead and top of head; constipation; pain in back and extremities; slight hyperæsthesia; eruption of erythema and petechiæ; marked congestion of conjunctiva; insatiable thirst; tongue coated with soft white fur, but clean at tip and edges; pulse 80 to 112. Convalescent in twenty days.

CASE 58. Mary Albright, æt. 37; intemperate; from out-wards. Muttering delirium; slight headache; constipation; muscular pains severe and general; slight opisthotonos; petechiæ on body and thighs; slight congestion of conjunctiva; insatiable thirst; tongue dry, brown, and fissured; pulse 80 to 120. Convalescent on twelfth day, with deafness.

CASE 59. John Pfaust, æt. 42; from Germantown Road. Wild, raving delirium; severe headache; constipation; bilious vomiting; muscular pains in back and limbs; slight hyperæsthesia; decided congestion of conjunctiva; intense thirst; tongue brown and pasty; pulse 80 to 130. Convalescent on eighteenth day.

CASE 60. Jesse Howard, æt. 42 (coloured); temperate; from out-wards. Stupid, but neither coma nor delirium; severe headache; constipation; sore throat; muscular pains in neck, back, and limbs; marked opisthotonos; slight hyperæsthesia; pain on pressure along entire vertebral column; marked congestion of conjunctiva; intense thirst; tongue dry and brown; pulse 100 to 125. In ward four days; died in convulsions.

CASE 61. Charles Brown (coloured); temperate; from out-wards. Severe headache; constipation; muscular pains in limbs; pain on pressure over seventh dorsal vertebra; conjunctiva highly congested; insatiable thirst; tongue coated with soft, white fur, cleanest at tip and edges; pulse 80 to 125. Convalescent on tenth day.

CASE 62. Jas. McGowan, æt. 35; intemperate; from prison. Stupid; severe headache; constipation; profuse petechial eruption; marked congestion of conjunctiva; intense thirst; brown, dry tongue; pulse 76 to 129. Complicated with pleuro-pneumonia of right side; very much prostrated at time of admission; died two days afterwards.

CASE 63. William McAllister, æt. 63; temperate; from out-wards. Slight headache; alternate constipation and diarrhœa; muscular pains in limbs and back; slight petechial eruption; marked congestion; slight thirst; brown, dry tongue; pulse could not be felt; complicated with double pneumonia. Death on ninth day. Brain lesions were very marked in this case; large masses of closely adherent lymph at base of brain and on medulla oblongata.

CASE 64. Mary Bunting, æt. 52; intemperate; from out-wards. Severe headache; constipation; bilious vomiting; general and severe muscular pains; slight hyperæsthesia; pain on pressure over cervical vertebræ; petechial eruption;

marked congestion of conjunctiva; intense thirst; brown and dry tongue; pulse could not be felt. Entered the ward in collapse; died.

CASE 65. Annie Fitzgerald, æt. 20; temperate; from out-wards. Coma; severe headache; muscular pains in back; pain on pressure over dorsal vertebræ; conjunctiva slightly congested; thirst intense; tongue dry, brown, and furrowed in centre, but clean at edges; pulse 90 to 160. Skin hot and dry just before death; complicated by pneumonia of right side pre-existing, and puerperal convulsions. Puerperal convulsions set in on the day she was delivered, continuing for four days, with twenty-six distinct exacerbations—changing on the fourth day into a comatose condition, lasting for three days; she again became partially conscious the day before that on which she died. Death by exhaustion on eighth day. *Autopsy* revealed large quantities of tough, adherent lymphy deposits at base of brain.

CASE 66. Mary E. Richardson, æt. 36; intemperate; from Sixth and Shippen Streets. Chill; intense headache; constipation; bilious vomiting; muscular pains in neck, back, and limbs; slight opisthotonos; slight hyperæsthesia; pain on pressure along entire vertebral column; eruption of erythema and petechiæ; marked congestion of conjunctiva; intense thirst; tongue coated with soft white fur, changing to brown, and dry; pulse 80 to 130. Complicated with bronchitis and bed-sores. Convalescent in fourth week.

CASE 67. Samuel Mellon, æt. 40; intemperate; from Sixth and Shippen. Chilly creeping; severe headache; constipation; muscular pains in limbs and neck; eruption of petechia and erythema; marked congestion of conjunctiva; intense thirst; tongue white and soft, becoming dry and brown; pulse 88 to 120. Convalescent in fourth week.

CASE 68. Jacob August, æt. 40; intemperate; from Seventh and Bedford. Severe headache; constipation; bilious vomiting; slight muscular pains in limbs and back; slight opisthotonos; slight hyperæsthesia; pain on pressure over cervical vertebræ; petechial eruption; marked congestion of conjunctiva; intense thirst; tongue white and soft, becoming dry and brown; pulse 84 to 125. Convalescent in fourth week.

CASE 69. Michael McGinity, æt. 47; temperate; from Scranton, Pa. Was taken sick at Scranton, prodromes lasting ten days. Severe headache; constipation; bilious vomiting; muscular pains in limbs and neck; eruption of erythema and petechia; marked congestion of conjunctiva; intense thirst; tongue soft and white, changing to dry and brown; pulse 90 to 120. Convalescent on eighteenth day.

CASE 70. Charles Johnson (coloured), æt. 25. Chills; severe headache; constipation; bilious vomiting; muscular pains in limbs and neck; pain on pressure over second cervical and seventh dorsal vertebræ; marked congestion of conjunctiva; intense thirst; tongue soft and white, changing to dry and brown; pulse 75 to 124. Convalescent on nineteenth day.

CASE 71. Gardiner Thomas (coloured), æt. 40; from out-wards. Slight headache; constipation; muscular pains in limbs; marked congestion of conjunctiva; intense thirst; tongue soft and white, changing to dry and brown; pulse 70 to 120. Convalescent on twelfth day.

CASE 72. Jane Morille, æt. 18; temperate; from obstetric wards. A hemorrhage of about forty ounces occurred two hours after labour, developing an irritative fever, on which supervened the meningitis; delirium slight; severe frontal headache; diarrhœa; slight vomiting; slight hyperæsthesia; eruption of erythema; eyes pearly white; thirst severe; tongue dry, glazed red; sordes on teeth and lips; pulse 140; epistaxis. Convalescent at end of fourth week. Mind, which was bright and active before sickness, was now very much clouded, and acts slowly and uncertainly; memory impaired; marked deafness.

CASE 73. Anna McGuire, æt. 19; temperate; from obstetric wards. Meningitis set in with milk-fever, with marked delirium; severe frontal head-

ache; bilious vomiting; abdominal pains; marked and general hyperæsthesia; well-marked petechial eruption; conjunctiva injected; slight thirst; tongue coated with white fur, but clean at tip and edges; pulse 140. Convalescent on eighteenth day, without complication.

CASE 74. Catherine Kellihan, æt. 20; temperate; from obstetric wards. Well-marked active delirium; severe frontal headache; diarrhœa; bilious vomiting; general muscular pains; slight opisthotonos; marked petechial eruption; chemosis of right eye; ecchymosis of left; slight thirst; tongue coated with a white fur, tip and edges clean, but afterwards dry and brown, with sordes; pulse 160; complicated by puerperal condition; in labour at time of admission; so stupid that she could give no history of herself; sordes on her teeth. There seemed to be no impediment to descent of fœtus, but the patient was so weak that recourse to the forceps was necessary. The case progressed happily for ten days, when peritonitis supervened, the symptoms of which (with the exception of the pinched face), disappeared after two days. Death occurred on twenty-second day after admission. *Autopsy* revealed large quantities of lymph, tough and adherent, and of a yellowish colour, along longitudinal sinus, in fissure of Sylvius, and at base of brain. Abdominal cavity contained about three pints of pus; intestines knotted and bound together; uterus clean and healthy in appearance.

CASE 75. James Poole, æt. 24; intemperate; from St. Mary's Street. Commenced with a chill; intense headache; constipation; general muscular pain; slight opisthotonos; pain on pressure over cervical vertebræ; marked congestion of conjunctiva; intense thirst; tongue dry and brown in centre; pulse 86 to 130; complicated by pneumonia. Convalescent in twenty days.

CASE 76. John Williams, æt. 12; temperate; from out-wards. Slight headache; constipation; bilious vomiting; muscular pains in limbs; slight hyperæsthesia; slight congestion of conjunctiva; intense thirst; tongue dry and brown in centre; pulse 86 to 120. Convalescent in twenty-one days.

CASE 77. Margaret Kelly, æt. 60; intemperate; from out-wards. Severe headache; constipation; muscular pains in neck, back, and limbs; marked opisthotonos; marked abdominal hyperæsthesia; pain on pressure over cervical and fifth, sixth, and seventh dorsal vertebræ; coarse petechial eruption; marked congestion of the conjunctiva; tongue dry and brown, with clean edges; pulse 112 to 120. Died on sixth day.

CASE 78. Francis Kelly, æt. 36; temperate; from the city. Severe headache; constipation; bilious vomiting; muscular pains in back and neck; eruption of erythema; slight conjunctivitis; severe thirst; tongue dry and brown, with clean edges; pulse could not be felt. Died on ninth day.

CASE 79. George Murray, æt. 57; from out-wards. Severe headache; constipation; muscular pains in limbs; pain on pressure over cervical vertebræ; marked congestion of conjunctiva; intense thirst; tongue dry and brown, with clean edges; pulse 116 to 120. Died in sixty hours.

CASE 80. Joseph Jackson, æt. 27; in medical ward. Severe headache; constipation; bilious vomiting; muscular pains in neck and back; slight congestion of conjunctiva; intense thirst; tongue dry and brown, with clean edges; pulse 90 to 120; frequent and copious epistaxis; eruption of erythema. Convalescent on twelfth day.

CASE 81. Aaron Breed, æt. 23; temperate; from Second and Pine. Slight headache; constipation; muscular pains in limbs and neck; no eruption; marked congestion of conjunctiva; severe thirst; tongue coated with a soft white fur, clean at tip and edges; pulse 80 to 112; repeated epistaxis. Convalescent on fourteenth day.

CASE 82. Louis Dupil, æt. 32; intemperate; from prison. Severe headache; constipation; muscular pains in limbs; slight opisthotonos; no eruption; marked congestion of conjunctiva; thirst severe; tongue dry and brown with clean edges; pulse 68 to 130. Convalescent on eighteenth day with deafness.

CASE 83. John Holland, æt. 27; intemperate; in medical ward. Wild delirium; intense headache; constipation; bilious vomiting; general muscular pains; marked opisthotonos; hyperæsthesia local over abdomen; pain on pressure over cervical vertebræ; eruption of erythema and petechiæ on seventh day; marked congestion of conjunctiva; severe thirst; dry brown tongue; pulse 70 to 128; complicated by phthisis and profuse epistaxis, exhausting the patient and causing death on twenty-first day.

CASE 84. Thomas Brown, æt. 16; temperate; from out-wards. Slight headache; constipation; muscular pains in back and neck; marked congestion of conjunctiva; severe thirst; tongue coated with a soft white fur, but clean at tip and edges; pulse 68 to 120; convalescent on sixteenth day.

CASE 85. John Watson (coloured,) æt. 25; temperate; from St. Mary Street. Active delirium with desire to leave bed; afterwards comatose for seventy hours; could neither swallow nor talk for four days; constipation; muscular pains in neck and limbs; opisthotonos so marked that body formed a bow resting on head and heels; marked hyperæsthesia; pain on pressure over dorsal and cervical vertebræ; marked congestion of conjunctiva; severe thirst; tongue dry and brown; pulse could not be felt for sixty hours, 80 to 130; temperature 98° to 104°; convalescent in three weeks; subsequent parotitis.

CASE 86. Jacob Yeager, æt. 65; intemperate; from out-wards. Severe headache; constipation; muscular pains in neck and limbs; slight opisthotonos; slight petechial eruption; slight congestion of conjunctiva; severe thirst; tongue coated with soft white fur, but clean at tip and edges; pulse 86 to 90. Died on ninth day.

CASE 87. John Wauch, æt. 52; intemperate; from outwards. Slight headache; constipation; general muscular pains; profuse erythematous eruption; marked congestion of conjunctiva; severe thirst; tongue coated with soft white fur, but clean at tip and edges; pulse 80 to 112; convalescent on sixteenth day.

CASE 88. Patrick Young, æt. 29; intemperate; from Bedford St. Intense headache; constipation; general muscular pains; marked opisthotonos; slight hyperæsthesia; pain on pressure over lumbar vertebræ; conjunctiva very much congested; severe thirst; pulse 86 to 140; convalescent on twenty-second day.

CASE 89. Samuel Jackson (coloured), æt. 25; temperate; from Locust St. Severe headache; constipation; muscular pains in neck and limbs; slight congestion of conjunctiva; severe thirst; tongue coated with soft white fur, but clean at tip and edges; pulse 68 to 120; convalescent on twentieth day.

CASE 90. Stephen Bristol (coloured), æt. 28; from out-wards. Headache constant and severe; constipation; nausea; slight general hyperæsthesia; marked congestion of conjunctiva; severe thirst; tongue dry and brown; pulse 60 to 120; convalescent on sixteenth day.

CASE 91. John Malone, æt. 51; temperate; from Tenth and Lombard Sts. Severe headache; constipation and nausea; muscular pains in neck and limbs; marked opisthotonos; profuse petechial eruption; marked congestion of conjunctiva; pupils contracted; thirst severe; tongue dry and brown; pulse 86 to 130; died on ninth day.

CASE 92. Richard Martin, æt. 36; from Front and Arch Streets. Headache severe; constipation and bilious vomiting; muscular pains in neck and back; pain on pressure over cervical region; eruption of erythema and petechiæ; marked congestion of conjunctiva; tongue coated with soft white fur, but clean at tip and edges; thirst severe; pulse 70 to 120; epistaxis. Convalescent on twelfth day.

CASE 93. James Wood, æt. 25; from Bedford Street. Severe headache; constipation; bilious vomiting; slight opisthotonos; eruption of erythema; slight congestion of conjunctiva; severe thirst; tongue dry and brown; pulse 80 to 126; epistaxis. Convalescent on seventeenth day.

CASE 94. Henry Saxe, æt. 68; from out-wards. Muttering delirium; intense headache; constipation; muscular pains in neck, limbs, and back; slight opisthotonos; petechial eruption; marked congestion of conjunctiva; severe thirst; tongue dry and brown; pulse 90 to 120. Died on eighth day. Large deposits of fibrin at base of brain.

CASE 95. Henry Baker, æt. 20; from Fifth and Catherine Streets. Slight delirium; slight headache; constipation; muscular pains in neck and limbs; marked congestion of conjunctiva; severe thirst; tongue dry and glazed; pulse 90 to 120. Died on eleventh day.

CASE 96. Thomas Ross (coloured), æt. 20; from Spafford Street. Severe headache; constipation; bilious vomiting; muscular pains in neck, back, and limbs; conjunctiva deeply congested; thirst severe; tongue white and soft, with clean tip and edges; pulse 64 to 120. Convalescent on eleventh day.

CASE 97. Catherine Cavanaugh, æt. 8; from Sixth and Shippen. Severe frontal headache; constipation; nausea; general muscular pains; slight hyperæsthesia; eruption of erythema and petechia; injected eye; slight thirst; tongue white and soft; pulse 120 to 135; skin hot and dry.

CASE 98. James Cavanaugh, æt. 11; from Sixth and Shippen. Severe frontal headache; constipation; vomiting; general muscular pains; rubeoloid eruption; eye congested; slight thirst; tongue white and soft; pulse 90 to 120; skin hot and dry. The mother of these children died in the city, of meningitis. The children were sent into the hospital, and are doing well.

This epidemic, like those whose histories have been handed down to us by previous writers, has selected its victims from among the robust and hardy. In our tabulated statement there are but eighteen females to eighty males, or a ratio of one to four. In the hospital entire there were treated during the four months over which our record extends, 161 cases; these were distributed in the different wards as follows:—

	Treated.	Cured.	Died.	Under treatment.
MEN'S WARDS.				
White medical	82	32	24	26
Black "	36	29	7	—
White venereal	2	1	1	—
Black "	1	—	1	—
Children's asylum	1	1	—	—
Total males	122	63	33	26
WOMEN'S WARDS.				
White medical	29	19	7	3
Black "	1	1	—	—
White surgical	1	—	1	—
White venereal	2	1	1	—
Nursery and obstetric	5	2	1	2
Children's asylum	1	1	—	—
Total females	39	24	10	5
Total males	122	63	33	26
Total	161	87	43	31

The patients ranged from 8 to 68 years of age. The character of our hospital prevents us from having many children among our patients. There were no cases originating in the children's asylum, and but two

were sent in from the city. Of the whole number scarcely one-third had reached the age of forty years. One-half were between the ages of fifteen and thirty; and were, as a class, of a vigorous and hardy appearance, but were exposed by their habits or occupations to the inclemencies of the cold and stormy winter which has just passed. With few exceptions they were intemperate and irregular in their habits; dwelling in the most filthy portions of our city, in crowded tenements, and frequently in under-ground apartments, and in many cases not coming into the hospital until the chances of recovery were seriously compromised.

The first case (see Case 1) was that of a large hearty man, who did not appear to be sick at the time of admission, but was thought to be merely labouring under the effects of a debauch. He was sent to the out-wards, where he remained a few hours only.

During the winter season the sleeping-rooms in the out-wards became very crowded; and they were in this condition all of the past winter, so that wards calculated to accommodate twenty-eight persons, were crowded with from seventy to ninety; mattresses being placed on the floor of the apartment, raising the person but a few inches above the floor.

Notwithstanding this condition of things, the epidemic did not spread; it showed no signs of contagiousness; sporadic cases occurred all through the house, being confined to no particular part, two successive cases rarely coming from the same ward.

The attack of the disease came on gradually, with about one week of prodromata, consisting usually of muscular pains in limbs, back, neck, &c. One patient, who had had a toe frosted a year before, complained of severe pain in it. Accompanying these pains were a general soreness, a feeling of extreme lassitude, general tenderness of the surface, so that a touch became painful; nausea, bilious vomiting, but little or no disturbance of the bowels.

The real onset of the disease is ushered in with sudden and increasing ataxic symptoms; an increase in the heat of the skin; a greater rapidity and diminished volume to the pulse; a coated tongue; great thirst; a peculiar change in the countenance; and the appearance, in many cases, of an eruption.

This eruption was of varied character; in a word, all the varieties characteristic of the typhoid class of fevers, except rose-coloured spots, were present, viz: erythema, urticaria, petechial mottlings, vibices, hemorrhagic petechia, &c. Hemorrhagic ecchymoses, or vibices, were not present in any case (by this I mean the rapid exudation of the altered blood into or underneath the cutis). Of the ninety-eight cases recorded, thirty-six had marked petechial eruptions not disappearing under pressure; thirteen had mixed petechiæ and erythema; nine erythema and urticaria; three had indistinct petechial mottlings; and in thirty-seven cases there was no eruption at all. If present, it usually appeared early; it was in many cases

the first diagnostic mark; and although showing, perhaps, the condition of the vital fluid, it did not seem to have any reference to the degree of cerebral inflammation or to the prognosis.

Headache was a prominent symptom, and a characteristic one. Many of the patients, somewhat peculiarly, adopted the same simile in describing this symptom, saying their head felt as if "bound with a hoop of iron." They generally located the pain as frontal or occipital, although in some cases it was diffused and general. It was more generally noticed than any other one symptom, being present in ninety-two of the ninety-eight cases recorded. The application of a few cut-cups to the temples and neck uniformly relieved this headache.

Delirium.—As a rule, the delirium in this disease was less marked than is usual in typhoid conditions. In thirty-one cases there was no delirium at all; there was sometimes a condition of morbid vigilance, with an anxious, restless expression of countenance. In a number of cases there was merely a loss of animation and interest—a mere stupidity and soporose condition. Sometimes this existed during the day, with slight delirium at night. In twenty-nine cases there was a quiet, talkative delirium, coming on periodically for a few hours in the evening, or lasting for a few days, and then disappearing. There were but three patients that evinced any desire to leave their beds while labouring under the delirium. In several of the fatal cases, in answer to any inquiry as to their condition, the patients would reply that they felt "bully." In nine cases the delirium was of a more active and even of a violent character. In five there was coma, lasting, in two cases, for seventy-two hours, the pulse at radius being entirely imperceptible for a great part of the time. In eighteen cases no notes respecting the delirium were taken.

Condition of bowels.—Constipation in seventy cases; diarrhœa in thirteen; alternate diarrhœa and constipation in ten; while thirteen were perfectly regular. The feces were but slightly abnormal in colour, odour, or consistence. Neither constipation nor diarrhœa gave any trouble in the treatment; either condition seemed rather to be the result of habit with the patient than the effect of the disease.

Condition of stomach.—Nausea in nine cases; bilious vomiting to a greater or less extent in forty; and a perfectly quiet condition in forty-nine. This symptom was in several patients a periodical one, appearing for a few hours in the day, for several successive days; at which times the stomach rejected any matters placed in it; at other times being tolerant and retentive. It was in no case a very troublesome symptom.

Muscular pains formed a prominent symptom among the prodromata, but varied much in location, severity, duration, and character. To a greater or less extent they were present in almost every case where reliable answers could be elicited. Sometimes these pains disappeared early, but in many cases they, with the stiffness, lasted until convalescence was

established. Their usual seat was in the posterior muscles of the legs and thighs, the erector-spinæ muscles, and those of the neck. Again it took the character of a general soreness more or less severe involving the whole muscular system, and having its culminating point in the neck or back, and developing in some cases decided

Opisthotonos.—This was marked in seventeen cases; accompanied with subsultus tendinum in two cases only; in twenty-eight cases slight contraction of the muscles of the back existed, evidenced sometimes simply by its being impossible to approximate the chin to the breast.

Hyperæsthesia of the general surface existed in thirty-eight cases in various degrees of intensity, sometimes very slight, in others so severe as to cause the patient to exclaim when touched with the end of the finger.

Pain on pressure over vertebræ was entirely distinct from the two symptoms last alluded to, and was elicited by pressure on the spines of the vertebræ; the test was not applied to all of the patients; but in four of them pressure caused pain along the entire length of the column; in eight it was confined to the cervical region; in four it existed in portions of the cervical and dorsal together; in seven it was local in portions of the dorsal region; and in one it was evident only in the lumbar region. This pain seemed to be of the same character as that elicited by similar means in myelitis, it was decided, but not severe; but in most of the cases it was easily distinguished from the tenderness of the skin and the soreness of the muscles of the back.

Condition of the eye.—The expression of the whole countenance was peculiar, and might almost be said to be diagnostic. The corners of the mouth were drawn down; the eyes protruded or ecstatic; the eyelids widely opened; and the pupils contracted, sometimes only apparently so in consequence of the large surface of the eye exposed. The patient had a restless excited air and seemed to watch with interest every motion and change of countenance of those around him. He seemed to be looking through instead of at an object, in consequence of the visual axis of the two eyes being parallel; in some cases the contraction or dilatation of the pupils of the two eyes did not correspond; occasionally one would contract while the other dilated under the action of a strong light. Photophobia was present in several cases, evidenced even during coma by the rigid and continued closure of the eyelids, and an opposition to their forcible opening. The vessels of the conjunctiva were universally congested (eye pearly white in two cases only, accompanied by excessive hemorrhage), reaching in one case the condition of chemosis this was followed in two cases by considerable purulent secretions, in others a few pus-corpuscles were observed occasionally. The lachrymal secretion was frequently excessive.

Tongue.—The condition of this organ was peculiar. In thirty-nine cases it was coated in the centre with a thick, white fur, soft and moist, the tip and edges remaining clean; this condition remained throughout

the entire attack. In sixteen cases it was in this condition at the beginning of the attack, but afterwards became brown and dry; in some of these it was soft at one examination, and dry and brown an hour afterwards. In most of the remaining cases it was dry, sometimes glazed, in others with a brown or yellow fissured coating; sordes was observed in three or four cases only, and in those the deposit was slight.

Thirst.—Was a marked and persistent symptom; in many cases as insatiable as met with in cholera, and yielding only when convalescence became fully established. Out of ninety-eight cases it was severe in seventy-six; in most of the others it was not so distressing, but was constant and unappeasable.

Pulse varied from normal to 150 beats per minute in uncomplicated cases, and as high as 160 in two cases in puerperal women; it was in all very weak, with a dichrotic tendency; sometimes entirely imperceptible in the radial artery, and always interrupted by a very slight pressure. It is perhaps the most deceptive symptom that was present. No one would have suspected an inflammation of a high grade, with a pulse which, although sometimes quick, was never strong, but always gaseous and feeble in the extreme.

The *temperature* is lower than that recorded in any other typhoid or inflammatory disease. The observations were made at 6 A. M., 12 M., and 6 P. M. daily; and were taken, as far as possible, in typical cases, and in those where the temperature was most elevated, and yet the average is lower by four or five degrees than that of typhus or typhoid fevers, pneumonia, &c. In two cases only did the thermometer in the axilla reach 105°. In fifteen cases it was between 104° and 105°; in twelve between 103° and 104°; in seven between 102° and 103°; in six between 101° and 102°; and in two it was below 100°; records being made in forty-four cases. The numbers given are the highest point reached in each case. The difference in the temperature at the evening and morning observations was not so marked as in most other fevers, a fall of more than one degree being unusual, and frequently there was no change. A regular and gradual descent indicated the beginning of convalescence; a rapid fall was the sure precursor of collapse.

Complications.—In nine cases there was a complication of pneumonia of one or both lungs; (when this came on while the patient was under observation it was preceded by an increase of temperature.) In seven cases there was an intercurrent bronchitis; and in many there was more or less tendency to irritation of the air-passages.

Duration.—In the condensed statement the duration has been marked in many cases as approaching twenty or thirty days. It must not be understood that the acute stage of the disease occupied the whole of this period; this is intended to include the three to ten days of prodromata, and so much of the convalescence as to enable the patient to rise, at which time the

observations ceased. The acute attack rarely lasted through a fortnight; in a few cases which were seen early, the disease was aborted by decided treatment, and the patients were declared convalescent in the first week. Death occurred, in the fatal cases, at various times during the first two weeks. In a few cases of peculiar virulence death intervened within the first forty-eight hours.

Of 161 cases treated, 87 were cured, 43 died, and 31 remained under treatment with a fair prospect of recovery; being a little over 26 per cent. of deaths out of the whole number of cases treated.

Sequelæ and complications.—Deafness existed during and after convalescence to a greater or less extent in sixteen cases. Bed-sores occurred in four cases; they were formed by large, deep, black sloughs.

Forgetfulness of events occurring during sickness, but while the patient was apparently in full possession of his faculties, was observed in seven cases. The events forgotten were such as the visit of a mother, &c. Complete loss of memory occurred in one case only. Epistaxis occurred in twelve cases, and so profuse in two as to cause considerable exhaustion.

Purulent discharges from the ears occurred in three cases during convalescence.

Parotitis was met with in two cases; both recovered.

Carbuncles and boils were noticed as frequent sequelæ. Partial paralysis was a sequelæ in three cases.

Delirium tremens, and the effects of debauch, was a frequent complication.

The puerperal state complicated five cases.

One case originated in the insane asylum.

PHILADELPHIA, 610 S. NINTH STREET.

ART. II.—*On Luxation of the Body of the Sternum; with Remarks on the Anatomical Structure of the Superior Sternal Articulation.* By JOHN H. BRINTON, M. D., one of the Surgeons of St. Joseph's Hospital, Philadelphia; and Lecturer on Operative Surgery.

THE sternum, it will be remembered, is composed of three separate parts; the manubrium, the body or gladiolus, and the xiphoid or ensiform cartilage. These portions are connected by two articulations, which by many have been supposed to become ossified in the later periods of life. But in all probability ossific union between the manubrium and body of the sternum does not take place so frequently as is generally supposed. Béclard states that it does not occur until the sixtieth year, and often not at all. Mr. Gray, in his *Treatise on Anatomy*, remarks that this articulation is rarely oblite-

rated, except in old age. An observation by the writer of about seventy bodies would corroborate these statements; for, although many of the sterna examined were those of persons far advanced in years, in only four or five instances was ossification of the superior sternal articulation discovered.

As might naturally be supposed, the manubrium and body of the sternum, forming as they do, in the vast majority of cases, an amphiarthrodial articulation, may at times become separated or luxated. This accident, however, if we may judge from the number of reported cases, is of exceedingly rare occurrence. So rare indeed is it, that it seems to have escaped the notice of nearly all surgical writers, or if noticed at all, to have been classed under the head of fractures. M. Maisonneuve, in a memoir read before the Academy of Medicine in Paris, in March, 1842, and published subsequently in the *Archives Générales* for July of the same year, was the first to describe the true nature, symptoms, and pathology of luxation of the body of the sternum. In his paper M. Maisonneuve reports two cases of this dislocation observed and treated by himself, and he also furnishes the details of three cases derived from other sources. The general characteristics in all of these instances were the same, namely, a dislocation of the upper portion of the body of the sternum, forward and upwards, upon the lower border of the manubrium. M. Malgaigne, in his treatise on Dislocations, reports three cases of traumatic luxation of the sternum in addition to those mentioned by M. Maisonneuve. He also submits accounts of three instances of pathological or non-traumatic displacements of the same bone. In 1863 M. E. Ancelet published in the *Gazette des Hôpitaux* an article on Luxations of the Superior Sternal Articulation, in which he presented a summary of all instances of these injuries previously reported; at the same time exhuming from the pages of one or two of the older surgical writers accounts of certain cases which, in his opinion, should be regarded as dislocations of the sternal bones, although they were ranged as fractures by the original reporters.

The above papers comprise—as far as the writer has been able to learn—all of the information we possess bearing upon the very interesting injury which forms the subject of this article.

It will be seen that the whole number of cases of luxation of the body of the sternum, both forwards and backwards, which have been reported, is but fourteen.

In view, therefore, of the rare occurrence of this accident, and of the infrequent opportunities which have been afforded for its post-mortem investigation, it seems to the writer that the notes of an additional case observed by him may not be without interest.

CASE I. Michael McAvenny, aged 23, a resident of Jaynesville, Penna., was admitted into the St. Joseph's Hospital on the 4th of October, 1859. He stated that about the 15th of August, while employed at the Black

Creek coal works, in Luzerne Co., he was caught by the flywheel, 18 feet in diameter, belonging to a 50 horse-power engine, by which he was carried once or twice around. His loss of consciousness was only momentary, and on recovering his senses he found himself under the flywheel, in the trench in which it plays. He experienced at this time no pain, but had, as he said, a dead feeling in his legs and in the lower part of his back. For a week after the accident, he suffered from retention of urine, necessitating the use of the catheter. This retention has since been followed by urinary incontinence, which exists now, as well as involuntary evacuations of his bowels. Up to the time of his being brought to St. Joseph's Hospital he had been cared for by his friends at Jaynesville, and had been under medical treatment.

On examination after his admission into hospital, I found that a complete paralysis of motion existed in both of the lower extremities, as well as an entire loss of sensation, except over the left buttock. There appeared to be some prominence and derangement of the spinous processes of the seventh and eighth dorsal vertebræ, with slight pain on pressure. A luxation of the sternum existed at the junction of the manubrium with the body of the bone, the latter being thrown forwards and upwards, and resting upon the former. The prominence of the upper end or border of the body of the bone was very marked, measuring in height perpendicularly more than one-half of an inch; the central facet for the articulation of the manubrium, as also the two lateral facets for the articulation with the inferior articulating surfaces of the second rib on each side could be distinctly detected by the finger. Both of the second ribs were apparently adherent to the manubrium. The third and fourth costal cartilages of the right side seemed to be fractured, and their sternal extremities were markedly elevated beneath the integuments. The space between the upper margin of the third and the lower margin of the second ribs on either side was much less than natural. The first and third intercostal spaces were normal. The patient stated that he had not at any time suffered much pain, nor had he experienced difficulty in breathing, save upon a very full expiration and inspiration. A large bedsore had formed on either buttock. He slept well, and his appetite and spirits were good. This patient's general health appeared to improve for a while after his entry into the hospital, under the administration of quinia, iron, and good diet; and the bedsores granulated rapidly, almost to the level of the surrounding integuments. For the first two or three weeks after admission, the temperature observed upon the inside of the thighs was somewhat elevated, averaging about one hundred and two degrees.

Nov. 15 *to Dec.* 15. During the month the lower extremities evinced a great tendency to slough; the bedsores on the buttocks re-formed, so as to expose the dorsal surfaces of the iliac bones, in spite of all precautions. Sloughs also formed on the legs posteriorly, and over the ankles to such an extent as to denude the tarsal bones; wherever the slightest pressure or tension existed, the integuments became gangrenous. Iron, quinia, malt liquors, and tonics generally were freely administered, the patient's appetite continuing tolerably good. From the 15th to the 31st of December, however, he became gradually weaker, and died from exhaustion on the 3th of January, 1860, ninety-four days after the reception of the injury.

Autopsy thirteen hours after death.—Body much emaciated; the sloughs on the buttocks broad and deep, extending to the dorsal surfaces of the iliac bones, which were denuded of periosteum. The body of the sternum

was found to be luxated upwards and forwards, covering the lower and anterior portion of the manubrium to the extent of three-quarters of an inch, and firmly bound to it by fibrous tissue. The anterior ligamentous sheath was ruptured. The lateral oblique facets on the upper portion of the body of the bone were readily distinguished, and were covered with their incrusting cartilage. The central facet for the articulation of the manubrium was covered by fibrous tissue. The projection of the body of the sternum upon the manubrium measured one-half of an inch in perpendicular height. The costal cartilages of the *first* and *second* ribs were adherent to the manubrium. The *third* right costal cartilage was fractured about one-half of an inch and the *fourth* costal cartilage of the same side about one and one-quarter inches from their sternal articulations. In both cases, union by fibrous tissue had taken place with deformity, the sternal extremities of cartilages projecting under the skin. The body of the sternum was twisted somewhat obliquely downwards toward the right side. The distance between the first and second ribs was normal; whereas, between the second and third ribs it was materially decreased, measuring less than one-half of an inch, whereas it should have been at least one inch.

Examination of Posterior Surface of Sternum.—Lower border of manubrium projecting downwards. Inferior articular facets of second costal cartilages discernible, although partially covered with fibrous tissue. Posterior ligamentous sheath of sternum raised up by the projection of the lower portion of the manubrium, but unruptured. The union of the second costal cartilages to the manubrium was undisturbed. The relations of all the other ribs to the sternum were normal, as were also the attachments of the clavicle to the first bone of the sternum. The manubrium and body of the sternum were firmly bound together in their abnormal position by adventitious fibrous tissue. Anterior mediastinum natural. Thoracic viscera healthy.

Spine.—The eighth dorsal vertebra was fractured and crushed, presenting an angular displacement backwards. The axes of the vertebral column above and below the seat of fracture, formed with each other an angle of twenty degrees backward. The posterior fragment of the fractured vertebra was forced backwards so as almost to touch the posterior lamina of the vertebra, occluding the spinal canal, and completely destroying the continuity of the spinal marrow. The investing membranes of the cord were torn off anteriorly, and the posterior portion of the sheath alone was left, tightly compressed between the displaced fragment of the body of the vertebra and the fractured spinous process. The spinal marrow to the extent of two inches above, and the same distance below the seat of fracture, was softened and disintegrated. Bony union of the fragments of the body of the fractured vertebra had occurred, and a considerable amount of bony callus had been poured out on the anterior portion of the body of the bone. There was no lesion of any of the abdominal viscera.

For the purposes of comparison the following summary of thirteen additional cases of luxation forward of the body of the sternum, is presented. These are all the cases which the writer has been able to obtain access to, and, as far as he can learn, comprise all of the authenticated reported instances of this injury :—

CASE II., observed and reported by M. Maisonneuve.—Carriere, a glazier, aged 27, on the 28th of August, 1841, fell from a height of forty feet upon the

floor of a church in which he was at work. He was carried to the hospital of Hôtel Dieu. Upon examination M. Maisonneuve discovered these lesions: 1, a contused wound of the scalp in the region of the left parietal boss, with denudation of the bone; 2, fracture of left clavicle; 3, an angular projection of the vertebral column, on a level with the fourth dorsal vertebra; 4, on the front of the chest, a projection forwards of the superior portion of the body of the sternum, which could be felt to rest upon the manubrium. The first and second ribs could not be detected, while all of the lower ribs were more prominent than natural, and were apparently intact, except the third of the left side, the cartilage of which appeared to be broken near its sternal articulation. There was complete paralysis of motion and sensation in the lower extremities. The patient, who had lost his intelligence at the time of the accident, regained it by the time of his arrival at the hospital. An almost constant involuntary dribling of feces continued; a bed-sore formed over the sacrum, and the patient sank from exhaustion on the 12th of October, six weeks after his entry into the hospital.

Autopsy.—1. Scalpy wound healed. 2. Fracture of clavicle united. 3. Sacrum exposed by bed-sore. 4. The spinous processes of the seventh cervical, and third and fourth dorsal vertebræ, which had been fractured at their base, were partially consolidated by fibrous callus. 5. Horizontal fracture, with crushing of the fifth dorsal vertebra; in the cavity of the vertebral canal, the membranes of the cord were intact, but the spinal marrow itself was atrophied, and softened for the space of almost three centimetres on a level with the fifth dorsal vertebra; above and below this point the marrow was healthy. 6. Sternum. The body of this bone was luxated without fracture forwards and upwards upon the inferior extremity of the manubrium, which it overlapped for about two centimetres. The cartilages of the first and second ribs preserved their normal relations to the manubrium. The cartilage of the third left rib was broken; in other respects the relations of the body of the sternum to the ribs were natural. The ligamentous fibrous sheath upon the anterior face of the sternum was ruptured, leaving the three articular facets upon the superior portion of the body of the sternum exposed to view, and covered with their cartilage. The fibrous sheath upon the posterior surface of the sternum was untorn, but was raised up by the projection of the inferior margin of the manubrium. The cartilages of the second ribs were united to their proper facet on this bone. The first and second sternal bones were strongly united in their abnormal position, so as to permit but little mobility.

CASE III., observed and reported by M. Maisonneuve.—Maupas Jean, aged 42, a tiler, fell forty-two feet upon the street pavement, and was carried, moribund, to Hôtel Dieu. He died very shortly, and on post-mortem examination the following injuries were observed: 1. A transverse fracture of sacrum. 2. Separation of both right and left sacro-iliac symphyses, and also of the pubic symphyses. 3. Fracture of twelfth dorsal vertebra, with laceration of spinal cord. 4. Luxation and fracture of wrist. 5. Luxation of the superior sternal articulation, the body of the bone being thrown forwards and upwards upon the manubrium, which it overlapped for the extent of about two centimetres; the cartilages of the first and second ribs remained attached to the manubrium, and those of the remaining ribs to the body of the sternum. The anterior ligamentous sheath was broken on a level with the luxated surfaces; the posterior sheath, on the other hand, was raised up and untorn. The three articular facets upon the superior border of the body of the bone could be felt through the integuments, and were covered by their incrusting cartilages. The ditsance between the superior border of the second sternal bone and the third ribs was normal. The cartilages of the second ribs remained attached to the first bone by their superior articular facets, while their inferior facets had separated from the body of the sternum. On the left side the cartilages of the seventh and eighth ribs were ruptured near their sternal extremity.

CASE IV., reported by MM. Maunoury and Thore, and quoted by M. Maisonneuve.—Bressaut, a laborer, was taken to Hôtel Dieu July 25th, 1841, having

fallen about twelve feet upon his back; paralysis of motion and sensation in lower extremities and lower portion of trunk; priapism; retention of urine; involuntary evacuations; respiration diaphragmatic. The patient died five days after the reception of the injury, when fracture of the fifth cervical vertebra was discovered, and the brain was congested with effusion. A dislocation of the second bone of the sternum, forward upon the manubrium, was also revealed.

In addition to the above case, MM. Maunoury and Thore have extracted from Roux's clinique two instances of injury to the sternum. In the first of these a man fell twenty-five feet upon a bank, producing fracture of the fourth dorsal vertebra, paralysis, and apparently separation of the two upper bones of the sternum. Death occurred forty days after the accident from suppuration of a bed-sore over the sacrum. In the second of these cases a man fell from the fifth story, and was carried dead to Hôtel Dieu. On examination, separation of the sternal and pelvic articulations, fracture of the last cervical and first dorsal vertebræ, and luxation of the right wrist, were revealed. Both of these cases were regarded by Maunoury and Thore, as well as by Malgaigne and Maisonneuve, as fractures. M. Ancelet, however, considers them to be true luxations. The writer has not included them in his summary of sternal dislocations.

CASE V., reported by Maisonneuve, is from a specimen without history, deposited in the Musée Dupuytren by M. Thillaye, in 1820.—This specimen presents a luxation of the body of the sternum forwards, the first and second ribs remaining attached to the manubrium. In this case the patient appears to have lived for some weeks after the reception of the injury, since a partial consolidation of fractures of the left clavicle and body of the scapula of the same side had taken place.

CASE VI., reported by Auran.[1]—In this instance, a man who was mounting a ladder planted against a tree, fell with it in such a manner as to strike the upper part of the sternum against one of the rounds of the ladder. As a result of this violence, the manubrium was forced backward behind the body of the sternum. This luxation was reduced by force applied to the upper and lower portion of the trunk, and the patient was cured in twenty days.

CASE VII., presented to the Academy of Medicine in 1843, by M. Drache, and quoted by Malgaigne, who examined the case.—This patient, a young man 18 years of age, was crushed in a cellar by pieces of timber. In endeavouring to extricate himself he heard a cracking of the sternum, and the luxation was produced. The body of the sternum was thrown forwards upon the manubrium. The second rib of the right side adhered to the manubrium; the left, much less depressed, appeared to be attached to the body of the bone. All efforts at reduction failed. The principal symptom in this case was the crackling caused by the sternum on inspiration.

CASE VIII., reported by M. Malgaigne, and treated by him at the Hospital Saint Antoine.—This patient, in passing from one boat to another, fell in such a manner as to strike the upper part of the breast-bone against the sharp edge of the boat. Luxation forwards of the body of the sternum took place. When examined by M. Malgaigne, the second rib of the left side was adherent to the manubrium, whilst the second rib of the right side appeared to be situated on a more anterior plane than its fellow, and to be separated from both sternal bones. This patient experienced much difficulty in respiration. Repeated efforts at reduction proved unsuccessful. On the twenty-fifth day the patient left the hospital.

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[1] Journal de Médecine, Chirurgie, &c., 1771, t. xxxvi. p. 521, and quoted by Maisonneuve and Malgaigne.

CASE IX.,[1] reported by Duverney.—"A quarryman lay upon one side under his work. The stone, which was more than five feet long, fell upon him. The compression was so violent, as well by the weight of the stone as by the resistance of the opposite side, that the second bone of the sternum was separated from the first, and made a wound in the teguments. The wounded person died instantly. The heart and lungs were found entirely dilacerated."

CASE X.,[2] reported by M. Chevance.—This patient, while working at a ceiling, fell upon his feet from the height of one story, luxating the body of the sternum forwards, and fracturing the cartilage of the second rib of the left side. The luxation was partially reduced, and absolute rest maintained for fifteen days. A month afterwards this patient was able to resume his occupation, but the deformity remained in only a slight degree less than before the attempted reduction.

CASE XI., reported by Auran[3] and Bazille (David) in 1771.[4]—A mason fell from a height of fifty feet, striking with his back a projecting object, so that his feet were on one side, and his arms on the other side of this object. The left femur was fractured, and the spinous processes of the last dorsal and first lumbar vertebræ. The first and second bones of the sternum were separated. This patient was treated by position, and recovered from all of the injuries he had received. The account given of this case is vague, and it is difficult to decide absolutely as to the precise nature of the injury.

CASE XII., quoted by Ancelet as Nelaton's case.—A young man fell from the second story upon his feet, fracturing both legs. He experienced pain at the anterior portion of the chest, and presented an incomplete luxation backwards of the first bone of the sternum, appreciable to the touch. This patient died in three days.

CASE XIII., quoted by Ancelet.—A young man, aged 18, fell twenty feet, striking the ischium and back. Depression of two-thirds of an inch at supra-sternal articulation. The luxation was reduced in twenty-four hours by placing a cushion under the back. The patient died. *Autopsy.*—Separation complete, of first and second bones of sternum. Two other fractures of sternum, as well as of sacrum, pelvis, and of first lumbar vertebra.

CASE XIV., reported and treated by M. Ancelet.—Alexis L——, a boy, aged 13, while exercising on parallel bars, his body curved forwards, and his feet almost touching the ground, suddenly came down upon his heels—without, however, losing his hold of the bars. On the following day M. Ancelet examined the patient. He found him in bed, his body curved forwards; severe pain, referred to the inferior portion of the sternum. No trace of contusion on any portion of the body. On attempting to straighten his body the pain and dyspnœa were markedly increased; prominence of the body of sternum, on which the central and left oblique facet could be felt; the right oblique facet could not be distinguished. The second rib of left side deeply seated; its fellow on right side apparently in relation with body of sternum. On placing a pillow under his back, allowing his head to hang over the edge of the bed, and making steady pressure on the anterior portion of the chest, on a level with the body of the sternum, M. Ancelet succeeded, after prolonged efforts, in reducing the dislocation. He then applied a retaining bandage. The boy was kept in bed six days, and at the expiration of three weeks was perfectly cured. In his remarks on this case, M. Ancelet inclines to the belief that this luxation was incomplete in character, and was perhaps brought about by the action of the pectoralis major muscle; that it existed without any grave concomitant lesion;

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[1] Duverney, "Diseases of the Bones." Translated by Samuel Ingham, Surgeon. London, 1762.

[2] Union Médicale, 1850, p. 6, and quoted by Malgaigne.

[3] Journal de Médecine, &c., t. xxxvi. p. 520.

[4] Prix de l'Académie de Chirurgie, t. 4, 1e partie, p. 452, 1819.

and that, moreover, the reduction was obtained, maintained, and followed by a complete cure.

In the preceding pages, reference has been made to all of the reported cases of anterior luxation of the superior sternal articulation, which the writer has been able to collect. It will be seen that in twelve of the fourteen cases presented, the body of the sternum was displaced upwards and forwards, and was complete. In two instances (Cases XII. and XIV.), the luxation of the bone was in the same direction, but was partial or incomplete. But one properly authenticated case is on record of the reverse displacement, namely, that of the body of the sternum backward, or what is the same thing, a dislocation of the manubrium forwards. In this case, which is reported by M. Ancelet, the deformity arising from a backward dislocation of the second sternal bone, was detected by him in a patient eighty-one years of age, whom he was examining for other causes. The manubrium rested in front of the body of the sternum, the first rib being attached to the former, and the second rib to the latter bone. The man had fallen about forty feet, but no reliable account of the accident could be procured. M. Ancelet, also cites as veritable backward dislocations of the body of the sternum, two other cases. One of these is reported by Petit, and another by Sabatier; but from the histories given, it would seem more than probable that in both of these instances the lesion was a fracture, and not a luxation.

From an analysis of the foregoing cases of forward luxation of the superior sternal articulation, it is evident that the injury in question may be produced either by direct or indirect force. Thus in both of the cases reported by Maisonneuve, and in those of Maunoury and Thore, Duverney, Chevance, Auran and David, and myself, the luxation was caused in all probability by indirect violence. On the other hand, in M. Drache's case, in that reported by Malgaigne (Case VIII.), and in that by Auran (Case VI.), the force was directly applied. As examples of the indirect force above alluded to may be mentioned falls from a height upon the feet, or upper portion of the trunk, and also pressure exerted laterally upon the thorax. In three instances in which the sternum was displaced by direct violence, the force was received immediately over the manubrium, driving this bone backwards, and permitting the body of the sternum to ride forwards and upwards. The results of the above cases (excluding the specimen of the Musée Dupuytren) may be thus summed up: Died, seven; Recovered, six. It will be observed, however, that in no one of the fatal cases was death brought about by the lesion of the sternum alone; in six instances it resulted from fracture of the vertebral column; and in one, Duverney's case, from laceration of the lungs and heart. These facts, taken in connection with the recovery in six instances, would indicate that the prognosis, as far as mere luxation of the sternum is concerned, is not necessarily grave. As Dr. Ashhurst has observed, in speaking of injuries of the

sternum[1]—"Luxation or diastasis is comparatively a slight injury, for the posterior ligament remaining intact, as was found in all the cases examined by Maisonneuve, the viscera escape laceration, and therefore, if there be not some complication which proves fatal, the patient may be expected to recover."

Symptoms.—The symptoms which have been noted in forward luxation of the body of the sternum, and which can with propriety be charged to the injury itself, are pain, dyspnœa, a crackling or creaking sound during the respiratory movements, due to the position of the bones, and deformity. The symptoms first enumerated may or may not be present in all cases, but when met with, they can readily be accounted for, if the abnormal relations of the two upper sternal bones are borne in mind. The latter symptom, the deformity, is perhaps pathognomonic. A deformity somewhat simulating this may exist in fracture, but yet it differs from it in certain essential characteristics. In luxation, the tumour or projection on the front of the chest which is caused by the overriding of the upper extremity of the body of the sternum upon the manubrium, varies of course in size according as the sternum is poorly or well developed—usually this projection is from one and three-quarters to two inches in breadth, and one half of an inch in perpendicular height. Its bony outline can easily be followed by the fingers, and the three articular facets, upon the upper portion of the gladiolus may be readily detected. Three facets as we will show hereafter, and as was first clearly pointed out by Maisonneuve, articulate normally; the central one with the lower end of the manubrium, and the two lateral ones with the inferior oblique facets of the costal cartilages of the second ribs. That these facets can be recognized even at a late period after the occurrence of the displacement, is proved by the case reported by the writer, in which these articular surfaces were clearly traceable at all times during the patient's ninety-four days of life.

Another series of symptoms usually met with in dislocation upwards of the body of the sternum, are those which depend upon the relations of the costal cartilages to the sternal bones. In the majority of cases reported, the cartilages of the two upper ribs are stated to have remained adherent to the manubrium, and to have been depressed or carried backwards with this bone. The cartilages of the third, fourth, fifth, sixth, and seventh ribs, on the other hand, remained attached to the body of the sternum, and accompanying this bone forwards presented an abnormally prominent appearance beneath the integuments. It has also usually happened that one or more of the last-named cartilages have been ruptured or fractured near to their sternal articulations. Thus, in four of the cases referred to in this paper (Cases I., II., III., and V.), the second ribs present their attachment to the manubrium; in one (Case VIII.), the

[1] Fracture of the Sternum, Am. Journ. Med. Sciences, Oct. 1862, p. 409.

second left rib adhered to the manubrium whilst its fellow on the right side appeared, as M. Malgaigne states, to have lost its attachments to both bones of the sternum. In one case (Case VII.), the same reporter observes that the second rib of the right side adhered to the manubrium, while that of the left side remained attached to the body of the sternum. In the case of the child described by M. Ancelet, the relations of the second could not be accurately ascertained. Another symptom of dislocation of the sternum is the diminished breadth of the second intercostal space. This must necessarily be the case if the third ribs, preserving their attachments to the body of the sternum, are carried upwards.

In the foregoing remarks, the writer has refrained from touching upon those grave symptoms, dependent upon fracture of the spine, or injuries to viscera which often coexist with, although not referable to, luxation of the breast bone. From what has already been set forth, it will be seen that in the majority of instances of sternal luxation of which we possess authentic post-mortem observations, the cartilages of the second ribs have remained adherent to the manubrium, and not to the body of the bone. This fact appeared to the writer to be so significant, as to lead him to search for an anatomical explanation of this peculiarity. He accordingly, some years since, made a series of examinations upon the cadaver, with the view of ascertaining the exact nature of the articulation between the manubrium, the gladiolus, and the cartilages of the second ribs. The result of his investigations coincided in the main with the conclusions arrived at previously by Maisonneuve. As an accurate account of the anatomy of this articulation is not to the writer's knowledge to be found in any of the treatises on anatomy in the English language, the following observations are offered.

Anatomy of the Superior Sternal Articulation.—Prior to the appearance of M. Maisonneuve's paper, the structure of the articulation existing between the first and second sternal bones had been overlooked, or at all events had been imperfectly described. In general terms the articulation was considered as somewhat analogous to that which exists between the bodies of the vertebræ; and ossification of the connecting fibro-cartilage was supposed to occur generally in advanced life. It is probable, however, as has been already stated, that this ossification is of comparatively rare occurrence. According to the researches of Maisonneuve, the superior sternal articulation stands upon the limit of amphiarthrodial and diarthrodial joints. Its movements are obscure, yet real, and it is consequently susceptible of a true luxation. M. Maisonneuve states, that while in a certain number of cases, about two in five, the two upper pieces of the sternum are united by an interarticular fibro-cartilage analogous to the intervertebral; in the greater number of instances the articular surfaces of the first and second sternal bones are covered with a distinct incrusting

or diarthrodial cartilage. Upon the second bone of the sternum this cartilage is continuous with the oblique facet for the articulation of the cartilage of the second rib. Upon the lower end of the manubrium the incrusting cartilage is continuous by a spur of fibrous tissue with the angle of the cartilage of the second rib; this latter is received into the notch formed by the manubrium above, and by the body of the sternum below. It results from these dispositions that the chondro-sternal articulation of the upper sternal bone is isolated from the sternal articulation properly so called. Also, that the cartilage of the second rib is much more strongly attached to the first than to the second sternal bone. Hence it is that in luxations of the body of the sternum forward the cartilage of the second rib remains adherent to the manubrium, and deserts the gladiolus.

Fibrous Sheaths.—The component portions of the breast bone are held together *anteriorly*, by a firm ligamentous sheath, composed of fibres of white tissue which cross each other in every direction, and are closely adherent to the surfaces of the bones and cartilages. The *posterior* sheath is composed chiefly of longitudinal bands of white fibrous tissue, which are but slightly adherent to the bones and chondro-sternal articulations. In luxation forward the anterior sheath is ruptured while the posterior is simply raised up and stripped from the bone for a short distance.

The following statement embodies the results of the examination by the writer of thirty sterna. More than forty additional specimens were also collected and studied by him, but the records of these last observations were mislaid, and the specimens themselves destroyed, during the writer's service in the army. But the general facts herewith presented held good in these instances also.

Tabular Statement showing in thirty instances the Nature of the Articulation between the Manubrium and Body of the Sternum; and that between the Sternum and Cartilages of the Second Ribs.

The sterna examined were those of—		
Adult males	19	
Adult females	8	
Newborn infants	3	
		— Total 30
Character of articulation between manubrium and body of sternum—		
Mobile, and elastic, in	27	
Firmly ossified; no movement, in	3	
		— Total 30
Structure of articulation between manubrium and body of sternum—		
One central synovial sac between first and second sternal bones	18	
Two synovial sacs separated by fibrous tissue between same	1	
One central synovial sac prolonged over two inferior chondro-sternal facets for second ribs	1	
Union by fibro-cartilage; no synovial sac	7	
Bony union complete	3	
		— Total 30

Mode of attachments of second costal cartilage to the manubrium—

Spur of ligamentous tissue binding the second costal cartilage to the cartilage covering lower central facet of manubrium	27	
Vestiges of same, ossification of superior sternal articulation having taken place	2	
Cartilage of second rib bound by fibrous tissue to first and second sternal bones, at all points of juxtaposition	1	
		— Total 30

Nature of superior chondro-sternal articulation of second rib—

Synovial sac, between superior facet of cartilage of second rib and manubrium	17	
Indistinct vestiges of same	5	
None; cartilages of second ribs attached to manubrium by fibro-cartilage	8	
		— Total 30

Nature of inferior chondro-sternal articulation of second rib—

Synovial sac between inferior facet of cartilage of second rib, and body of sternum.	28	
Vestiges of same	1	
Complete ossification of articulation	1	
		— Total 30

From an examination of the foregoing statement it will be seen, that the proportion of instances in which fibrous union of the superior sternal articulation was found to exist by the writer, is rather less than that stated by Maisonneuve. The latter estimates its occurrence at about forty per cent., while, according to the writer's experience, it was met with in rather less than twenty-five per cent. of the whole number of sterna examined by him. On the other hand, the ratio of cases in which this joint was found to be provided with two articular cartilages, and an intervening synovial sac was proportionately increased. In only three cases out of the thirty did complete ossification exist, and in these instances the sterna were taken from the bodies of very old individuals. In many other sterna of advanced life, the normal characteristics of a mobile joint were preserved. It therefore seems to the writer probable that ossification of the superior sternal articulation, even in advanced life, is the exception, not the rule.

The presence of the fibro-catilaginous spur, which attaches the projecting angle of the second rib to the lower border of the manubrium is a noticeable fact. It was found to exist in a strongly marked degree in twenty-seven of the instances included in the table; and to a less marked degree in two others. In only one specimen was this ligament wanting, and in that one the cartilage of the rib was bound firmly by anterior and posterior ligaments to both the manubrium and gladiolus. In the table a comparison is offered as to the relative frequency of occurrence of synovial sacs between the upper facet of the costal cartilage and the manubrium; and the lower facet of the same cartilage and the body of the sternum. It will be seen that the synovial sac and double cartilage exists much more frequently in the latter articulation. In the former the synovial sac, when it

does exist, is comparatively small in size, and often indistinct. From all of these considerations it would seem that the cartilage of the second rib is much more firmly attached to the manubrium than to the body of the sternum; and that this anatomical peculiarity explains the clinical fact, that, in the luxation forwards of the body of the sternum, the second rib remains adherent to the first, and parts from the second sternal bone.

ART. III.—*Solvents for Cholesterine, &c. &c.* By T. H. BUCKLER, M. D., of Baltimore.

IT is believed that chloroform (terchloride of formyl) and succinate of the peroxide of iron will be found superior to any other agents as solvents for cholesterine and cholesteric fat, whether in or out of the living body. Chloroform taken into the stomach for the solution of gall-stones contained in the gall-bladder, and the continued use of succinate of iron to control the fatty or cholesteric diathesis and thereby prevent the formation of other calculi, have been invariably found by the writer trustworthy and successful after an experience of twenty years.

Turpentine and ether combined, as recommended by Durande, of Dijon, are the agents generally used as solvents of gall-stones. In regard to these remedies, we have only to say that a mass of cholesterine immersed in turpentine for three weeks had undergone no sensible loss of weight at the end of that time, and that however soluble this substance may be in ether, chloroform must always be found preferable, since it not only acts as the most rapid solvent, but at the same time produces the anæsthesia so necessary for the relief of the anguish invariably attendant on an acute attack of biliary colic.

In 1848 a mass of cholesterine of the size and shape of an ordinary sized hen's egg was taken from the gall-bladder of a woman who died at the Baltimore Almshouse of some other affection. It was readily separated by gentle traction with the fingers into seventy-five irregularly quadrangular bodies about the size of an ordinary garden pea when dried. These were subjected, in separate vials, to every agent deemed capable of exerting on them a solvent influence. The masses immersed in the various acids, nitro-muriatic amongst others, had undergone no sensible loss of weight at the end of several weeks. Finally a mass, weighing several grains, immersed in Edinburgh chloroform, underwent solution in a few minutes, leaving only a friable refuse resembling the cinder of burned paper.

Not long afterwards we were consulted in the case of a married lady, aged 38, the mother of five children. She was stout and strong, and had

always enjoyed good health up to the time of the attack, which was ushered in by paroxysms of pain in the right hypochondriac region, amounting at times to positive anguish. On examination an irregular indurated tumour was felt through the walls of the abdomen, directly over the inferior margin of the liver. For some days this case was believed to be cancer of the liver, but as the paroxysms of pain were followed by jaundice, and the facies of the patient was not that of cancer, a conjecture was formed that the indurated tumour in question might be produced by a distended gall-bladder filled to a greater or less extent with biliary calculi and protruding beyond the inferior margin of the liver. A teaspoonful of chloroform was given by the stomach every hour while the pain lasted, and a teaspoonful only after each meal for a period of five days longer, when the indurated tumour, before described, entirely subsided, affording unmistakable evidence that the gall-stones, none of which were found in the stools, had been entirely dissolved out of the gall-bladder by the use of chloroform. About three months afterwards, this lady, who had enjoyed good health in the interval, was again seized with a paroxysm of anguish in the right hypochondriac region, owing evidently to a newly-formed gall-stone lodged in the trumpet-shaped mouth of the cystic duct. This being again dissolved by the use of chloroform, it was deemed desirable to administer some agent capable of controlling the cholesteric diathesis, and thereby prevent the further formation of biliary calculi. Seeing that the difficulty of dissolving gall-stones by any other agent than chloroform or ether grows out of the fact that cholesterine contains a very small amount of oxygen (from one and a half to two per cent., which is less than that of almost any other known substance), it seemed reasonable to suppose that a highly oxygenized compound would be found the best for attaining the object in view. Accordingly succinic acid and peroxide of iron were selected, on account of the large amount of oxygen contained in both of them. The hydrated succinate of the peroxide of iron was prepared by the eminent chemist Dr. David Stewart, of Baltimore. The lady, whose case we have just stated, made use of this salt as a permanent treatment to control the cholesteric diathesis, and thereby prevent the formation of gall-stones by destroying the raw material of which they are composed. She continued to take it for a period of six months, and resumed it at intervals afterwards in the following dose: ℞.—Hydrated succinate of the peroxide of iron, ʒiss; water, fʒviss.—M. S.—A teaspoonful after each meal. She has had no recurrence of the attacks since she commenced the use of this salt, and enjoys excellent health at the present time. Three other cases treated with chloroform were promptly relieved.

It is above all other agents the remedy for this disease, performing as it

does the double work of a solvent and an anæsthetic. In all of these cases the succinate of iron was used as a permanent treatment after the chloroform had done its work. One other case terminated fatally, in which, in consultation, this treatment was advised but not carried out. The patient, a young and lovely married woman, Mrs. Z. P., residing at Sassafras, Eastern Shore of Maryland, aged twenty-one, was taken to a neighbouring city to consult two deservedly eminent medical gentlemen, who told her she was much too young and full of health to have biliary calculi; and one of them gave her *Budd on Diseases of the Liver* to read as proof of the correctness of their opinion. They told her husband the previous attack was hysterical, and advised that she should live generously, and go to the opera every night by way of amusement. She did go to the opera each night, and eat a supper on returning to her hotel. The night of the last supper she was seized, shortly after going to bed, with pain in the right side, and continued in great anguish until ten o'clock the following morning, when she died. A post-mortem examination disclosed a gall-stone about the size and shape of a common Alpine strawberry, which her husband sent me.

After what has been demonstrated by H. Bence Jones and others in reference to the permeability of tissues, there is every reason to believe that a sufficient quantity of chloroform would pass into the gall-bladder through the intervening parts alone to dissolve out gall-stones, provided its use were continued a sufficient length of time; but when we reflect that chloroform is taken directly from the stomach into the current of the circulation, and that a large portion of it is carried directly to the acini of the liver, where, mingling with the newly-formed bile, it passes with it into the gall-bladder, it is easily seen that gall-stones may be dissolved with as much certainty as if they had been placed in a bath of chloroform outside of the living body.

The use of succinate of iron may also be extended with advantage to the treatment of leuco-phlegmatic subjects in whom there is a tendency to a redundance of fatty tissue, and when there is reason to suspect that a deposit of the great disorganizer, cholesteric fat, may be forming about the heart and arteries, or in other structures. The popular idea is that a man must be very well because he is very fat, when directly the reverse is often the case, adipose deposit being so frequently a form of structural degeneration of the tissues. It may be useful to persons having a tendency to obesity, and save them the necessity of carrying out the too rigid and often injurious Banting system of diet.

The writer is not aware that this salt has ever been prepared by any one but Dr. Stewart and his brother, J. V. D. Stewart, of Baltimore, and it is perhaps important to state that it should be prepared in the hydrous state and kept constantly in a water-bath, for if dried it will never afterwards undergo a proper solution in water, but always form a gritty mixture.

This paper is only intended as a small contribution to the present know-

ledge of the subject, for the benefit of many better informed than the writer on this and all kindred topics, with the hope that they will communicate the results of their trials to the editor of the *American Journal of the Medical Sciences.*

ART. IV.—*On the Influence of Antecedent Disorders upon Organic Affections of the Heart and Brain.* By E. HOLDEN, M. D., of Newark, N. J.

THE following collection of cases has been made with a view to ascertain the bearing of familiar disorders upon subsequent organic disease of the heart or brain. While the results are somewhat unsatisfactory, many points of interest have been developed, and the results are therefore deemed of sufficient interest to be made public.

It should be premised that a majority of cases are from among selected and assured lives. The whole number of such being one thousand three hundred and thirty two, of which seven per cent. were from affections of the heart and six and seven-tenths per cent. from affections of the brain. Of the remaining cases, four hundred and thirty seven were from the books of county physicians, five per cent. from disease of the heart, and two and eight-tenths from diseases of the brain; three hundred are from general practice in the community, six per cent. from disease of heart, and four and six-tenths per cent. from affections of the brain.

The following remarks apply solely to the first mentioned. That the complicating question of hereditary taint and disposition may be removed as far as practicable, the first one hundred and eighty-four deaths from these forms of disease are exclusive of all in whose immediate families (parents, brothers, or sisters) more than one similar case had occurred. The bearing of rheumatism upon cardiac and cerebral disease presents itself as of special interest in such an investigation, particularly as regards the apparently innocent varieties in which no evidence of any primary inflammation of cardiac membranes has existed. Unfortunately the difficulties in the way of establishing connection in the latter are almost insuperable, and the present collection has furnished but meagre results in relation to it. Observation has been made, however, in a few cases with a view to this point, aside from those following, and out of twenty-three persons taken at random who had been subject to rheumatism, and who, though esteemed healthy, were found to have organic disease of the heart, fifteen had had no attack in ten years and four not within five years, none of them ever having shown evidence of pericardial or endocardial inflammation. Yet actual causative relation in these cases must of course be only conjectural, since there was nothing to show that the attacks of rheu-

matism were even precedent to the commencement of cardiac trouble. The known connection of this troublesome disease with organic affections of the heart through serous inflammation might, however, justify inference. That a more or less direct tendency to organic disease should be induced by the rheumatic poison seems probable when we consider the evident tendency to acute affections which exists during the progress of the primary disease, and that as moreover the absence of acute inflammation guarantees no security against the perverted nutrition, the calcareous deposit, the distorted or immovable articulation, it is, perhaps, unreasonable to suppose that the heart should escape some equally unfortunate though less rapid and less perceptible derangement.

Many cases have necessarily been met verifying familiar statistics. Results have, however, been sometimes puzzling; for example, out of fifty-one persons suffering from valvular disease of the heart, not hereinafter included, only twenty had ever been afflicted with rheumatism, while it is stated in a note to Dr. Flint's work on *Diseases of the Heart*, that seventy per cent. of cases of valvular disease were found to have been so preceded. Subsequent investigation showed, however, that of the remainder (thirty-one) a majority, probably, owed disease to hereditary predisposition. The apparent discrepancies in statements of observers, and especially of the somewhat earlier ones, in relation to coexistence of endocardial or pericardial inflammation with rheumatism, has led to examination of localities as a supposed reason. As might, perhaps, have been anticipated, the proportion was found to be far greater amidst the lumbering districts of Jefferson Co., Pa., and of the coast of Maine than elsewhere, and apparently irrespective of the violence of the rheumatic attack.

As instances of difference in statement alluded to, Dr. Levett found of seventy-two acute cases, less than one-fourth suffering from the cardiac complication. Dr. Wm. Budd (*Tweedie's System Pract. Med.*), out of forty-three carefully observed cases gives one-half as complicated; while Bouillaud, to whom is, perhaps, due the honour of first showing the connection between the two affections, says a great majority are thus afflicted.

I have seen it stated that heart complications in rheumatism are more liable to occur between the ages of fifteen and thirty, rarely above fifty; but when we reflect that this may be owing to the larger numbers of cases of rheumatism which occur between these periods, and that it is rare to find a first attack after fifty, we can scarcely infer that an attack outside of these limits is any less liable to be followed by untoward results. Indeed Dr. Fuller says, that, from observations of different gentlemen, one-third of all cases of complication occur under fifteen, one-fifth between fifteen and twenty, and one-tenth between twenty and twenty-five, diminishing rapidly after twenty-five. The cases included in the present article being solely from among adults, only partial comparison is possible; the number of *deaths* from inflammatory affections of the heart, irrespective of any connec-

tion with rheumatism, will be seen to be greatest between thirty and forty, and scarcely less in any ten years up to seventy. Dr. Watson says, the younger the party the more liable he will be to such heart trouble.

One thing, however, in regard to this point is probably true; the fibrinous exudation of inflammatory action before the age of fifteen will be less likely to result in adhesions and hypertrophy than after that age.

The frequency of connection of hypertrophy of the heart with some antecedent inflammatory action in its serous membranes, considered by Hope as almost invariable, may perhaps be estimated by reference to the cases given of this variety in the ensuing tables; only one in eighteen presenting any evidence of antecedent inflammatory action, or even of rheumatism, a result coinciding as negative testimony with the observations of Laennec and Bouillaud (*Leçons Cliniques*, 1853), by whom it may be remarked pericardial adhesions were considered harmless. In reference to affections of the brain as a sequence of rheumatism, it may be briefly remarked that, out of the ninety deaths given, seven only had suffered at any previous period from rheumatism, or one in thirteen.

Affections of the kidneys, and their pathological relation to diseases of the heart, have always proven subjects of interest, yet the results here attained are simply unexpected, not important; even the inflammatory affections present but two instances of antecedent disease of the kidneys, and these had been consequent upon scarlatina. Of the cases of hypertrophy, three had been similarly preceded.

As regards pyæmia, not unfrequently a concomitant of pericarditis or endocarditis, it is not surprising that the present list shows nothing, the two cases of phlebitis antecedent to inflammatory affections, and one mentioned as preceding death from hypertrophy, are the only ones in which pyæmia could be even surmised, and are without particular value. Connection between various other depraved conditions of blood has been supposed to exist, as, for example, in scorbutus and purpura or variola, typhus and typhoid fever, yet experience with the first of these, at least, in the navy and army of the United States, leads me to the belief that such connection is no more than coincident; the proportion of temporary functional disorders being, as might be expected, very great. In the latter diseases, especially typhus and typhoid, softening of the heart, as is well known, is not very unfrequently a complication.

The occurrence of jaundice in three out of eighteen cases of hypertrophy (with and without dilatation), may be worth mention as compared with the received opinion that it occurs only in an exceedingly small proportion of cases. The subject of connection between disease of the nervous system, and especially asthma, and cardiac disease, presents itself in interest and importance second only to that of rheumatism.

Especially is this true in its bearing upon prognosis, and were it possible always to decide that a given case is one of asthma par excellence, a pure

neurosis, the comfort and assurance afforded would be of benefit. Usually there are difficulties in the way, and we fail to give time and patience to discriminate between that which is properly asthma and that which is but a symptom of cardiac disease, or a form of suffocative bronchitis, which perhaps in this country most frequently receives the name. Yet the comparative imminency of danger in the three varieties is apparent. The conflicting opinions entertained regarding the tendency of asthma to produce disease of the heart, and shorten life (even among medical men), have possibly grown out of the indeterminate signification attached to the word.

Only by sifting out the cases which are doubtful, and carefully watching through a series of years the selected cases of this neurosis, could the liability to affections of the heart be calculated; a task of exceeding difficulty, and especially so when the statements of the party, as in the present instance, are indefinite or contradictory. Cases of true cardiac asthma, for example, the mere symptom of a carelessly overlooked organic disease of the heart, may be for years considered purely neurotic, and subsequent examination tempt us to mark as an effect what has been really a cause.

Inaccuracy of early diagnosis in cases of various organic disease of the lungs not unfrequently complicates inquiry or leads to false conclusions; but the objection is particularly true in cases where valvular disease has existed of such character as to cause obstruction to the free exit of blood from the cavities of the heart, and the usually ascribed results of asthma (dilatation) hypertrophy have succeeded. Reliable statistics on this subject are extremely meagre.

In connection with the present inquiry, I have collected but twenty-eight cases of asthma proper, and these chiefly in Maine and Ohio. The duration of the disease varied from three to twenty years, and in four only was there any evidence whatever of affection of the heart. Yet that even in pure asthma there exists a tendency to disease of the heart, though confessedly slowly developed, seems plausible, aside from statistics, for the following reasons.

1st. The intimate relation existing between the organs supplied by the pneumogastric nerve and the familiar example of cardiac derangement, as a consequence of gastric disorder, leads us to infer that a tetanoid condition of one set of filaments would in course of time seriously affect another.

2d. There not unfrequently results a condition of lung causing obstruction to the current of blood from the right ventricle of the heart, and where asthma has existed till advanced life there occurs exceeding frequency of cardiac disease, often at a stage incompatible with any idea of priority, a frequency suggesting a diminution of the vitality essential to repair with a previously existing aggressor, in other words, the action of a similar force with diminished resistance; an idea of this frequency may be gathered from the investigations of Maclachlan. (*Diseases of Advanced Life.*) Of two hundred autopsies of asthmatics over sixty years of age,

every one had organic disease of organs of respiration or circulation. The direct mortality from asthma is well known; a modern writer (Salter) commences a chapter with this startling sentence, "Asthma never kills," and the author last mentioned states that out of two hundred cases only one death could be ascribed to asthma.

This peculiarity of the disease that it kills through organic changes in vital structures, and so rarely of itself, together with the slow progress of organic change in middle life, may have given rise to the familiar adage that it is a "lease for a long life."

The bearing of neuroses upon cardiac disease certainly presents a wide field of inquiry, yet none among them are of greater interest or importance than neurosis of the cardiac plexus—angina pectoris. The disputed nature of this affection, and the bearing of other neurotic affections, especially those involving important organs, open naturally the whole subject of neuralgias, and their influence in producing organic disease; and secondarily, the question of the bearing of functional disorders of the heart.

The indefinite ideas prevailing and growing out of differences of opinion on this subject may perhaps render a moment's digression excusable. That we are warranted in regarding angina as a neurosis, and the organic lesion as a coincidence or result, the investigations of Laennec, Chapman, Desportes, and others, seem to show. It is, moreover, of infrequent occurrence in organic disease of the heart, and in cases of death from a paroxysm, the lesions when found are variable, both in character and degree. Dr. Jones, in his admirable treatise on functional nervous disorders, entertaining the opinion that it is a pure neuralgia, discusses in brief (ch. xxvii.) the opposite opinions of Watson (*Practice*), and that of Stokes, Morgagni, Copland, Forbes, &c., and presents three important cases. In one, a patch of calcareous deposit was found in one of the sinuses of Valsalva; in another, atheromato-calcareous degeneration of the left coronary artery, to which the heart must have become habituated, and in the third, there appeared absolutely no cause for the fatal event.

A single case of this character, even if there were no others, and further testimony, weighs heavily as positive evidence against a host of negatives, and is, moreover, not open to the objection urged against the observations of Sir John Forbes, that "certain morbid conditions of the heart have only lately been brought to light, and so might reasonably have been overlooked."

Dr. Jones, continues—

"The absence of any constant morbid condition, in instances where organic disease is found, and the frequent existence of all kinds of organic lesion, without trace of angina, incline me very much to the belief, that the essential circumstance in the disorder under consideration, is an attack of neuralgia, quite similar to that which would be unimportant elsewhere. This seems to be nearly the opinion entertained by Trousseau, and is further supported by complete cures of the disease, which have occasionally been accomplished."

In conceding this, we admit the lesion to be either simply coincident, or a result. That it is not the former would appear from the circumstance that careful observers have insisted that the structural change is invariably present in cases of this disease.

The query, however, which we present is this: Does the existence of a neurosis in any other part of the system (except perhaps of the organs supplied by the same pneumogastric) render a person liable to organic disease of the heart, through neurosis of the cardiac plexus? Of the seven fatal cases presented as from neurosis, three had been subject to various neuralgias antecedent to any symptom of angina pectoris, yet unfortunately so small a number proves nothing.

Of the other varieties, in only two was there neuralgia worthy of mention, and in both of these it was characterized as neuralgic rheumatism, one a case of valvular disease with phthisis, the other of valvular disease with Bright's disease of the kidneys.

That paroxysms of angina pectoris may supervene upon a persistent course of neurotic affections elsewhere, the clinical experience of most observers furnish examples. In the deranged condition produced by excessive use of tobacco, a pulmonary or gastric neuralgia is apt to be followed by a severe angina, though fortunately often amenable to treatment. M. Beau, in the *Journal of Practical Medicine and Surgery*, July, 1862, gives eight cases from this source, two of which proved fatal.

Malarious influence, upon occasions in which the nervous system seems peculiarly the object of attack, may, as is well known, produce cardiac as well as other neuroses and of an intractable variety. Coupling with this characteristic of certain nerve disorders the fact that any neurosis of the cardiac nerves is liable to be persistent and little amenable to treatment, and the liability to structural change or anticipating fatal issue is not improbable, and it is of little importance whether we consider the affection as purely of the sympathetic with constriction of the coronary arteries and imperfect supply of blood to the heart, as has been supposed, or of the cardiac nerve centres and nerves with paralysis of the heart.

As stated, the subject runs naturally into that of functional disorders and their bearing on organic disease. It has been asserted that clinical experience of observers has failed to sustain any connection between them. It is no place here to discuss such a question. It is well known that functional derangement may be frequent, persistent, and distressing, and yet after months of duration organic change cannot be detected, but only the most carefully collected cases, with notes of frequency and severity of attack and with especial view to circulatory and nervous condition aside from any poignancy of sensation, should establish as a fact immunity from danger of organic disease.

Desirable as it is and pardonable to assure a patient of his safety, and indeed in many cases correctly so to do, is the fact proven that such immu-

nity exists—save, of course, in those cases in which the functional disorder is temporary with protracted interval, or where the sensations, though exquisitely poignant, are accompanied by inconsiderable actual derangement?

The hyperæsthesia of the cardiac nerves consequent upon debility, or the tetanoid condition which the experience of Rouget (*Journ. de la Phys.*, 1860, p. 509) would lead us to believe follows excessive use of tobacco, alike interfere with the delicate machinery of a vital organ, and the fatal cases upon record warrant at least a guarded opinion.

Remark will perhaps be pardonable in this connection upon the influence which organic lesions of the heart exercise on the brain, and *vice versâ*, although no notes have been taken on the subject.

It is a common belief that hypertrophy of the left ventricle is a prolific cause of cerebral congestion and apoplexy; but the researches of Walshe, while showing connection between apoplexy and heart disease, yet show that hypertrophy has but slight influence in the production of such disease. The fact that obstruction to the return of blood to the heart may be ample cause for apoplexy, especially when taken in connection with any morbid constitutional condition, and the fact, moreover, that with hypertrophy such obstruction often does actually exist, seems to furnish a more probable cause. Rochoux states (*Dict. de Méd.*, iii. 503) that out of forty-two cases of apoplexy analyzed, hypertrophy was found in only three, a proportion, as remarked by Watson, merely coincident. The opinion entertained by Hope that aortic valvular lesion accompanied by hypertrophy involves liability to apoplexy seems to be disproved by more modern observers. Dr. Flint, for example, out of seventy-two cases analyzed found such lesion in only seven; and these occurring at ages in which apoplexy is most apt to occur irrespective of heart disease.

A diseased condition of the brain itself is, perhaps, generally considered the most frequent predisposing condition.

Dr. Clendenning says that out of five hundred dissections of apoplectic cases, one hundred and sixty-six had disease of the heart in some form.

The comparative ages of persons given below, the bearing of occupation, and in affections of the brain that of physical conformation, may be worthy of consideration.

The deductions are made from tables in which the assigned cause of death; the actual cause; the diseases and causes of death of parents; the antecedent diseases of party; the results of autopsy; the age and occupation, formed separate columns, and were objects of special investigation.

The occupation of parties may be thus tabulated:—

	Heart Disease.	Apoplexy.
Engaged in mercantile pursuits . . .	61	53
Professional men	10	6
Mechanics	12	3

	Heart Disease.	Apoplexy.
Farmers	4	4
Mariners	1	5
Secretaries	—	4
Lottery dealer	1	—
Butchers, hotel keepers, etc. etc., unknown	5	15

First, with regard to disease of heart. No previous disorder was suspected in fifty-five. No disease of any kind sufficient to require attendance of a medical man ever suffered from (statement of party prior to death) in forty-three; twenty-four had had palpitation or other symptom indicative of disease of heart.

Of the first ninety-four, twenty-two were inflammatory affections, *i. e.*, pericarditis, endocarditis, etc.

Every recorded death assigned to rheumatism, save one, typhoid in nature, proved to be from affection of the heart. Of these, six were inflammatory; one with valvular and paraplegic complications; one was preceded by hypertrophy, a probable result of former disease; one was evidently a neurosis, while of the inflammatory affections, not assigned to rheumatic origin, four had at times suffered from rheumatism, or rather four only mention the fact.

Of the number not thus assigned—

1 was preceded by no disease save scarlatina ten years before; æt. 39; death arising after pericarditis from effusion.
1 was preceded by no disease save angular curvature of the spine; æt. 45.
1 was preceded by slight "asthma" (?) several years, and believed cured.
1 had never been sick, but his mother had suffered from heart disease; æt. 39.
1 was preceded twenty-three years by scarlatina, and no other disease (?) æt. 32.
2 were preceded about three months by phlebitis; æt. 47 and 56.
1 had never been ill, and no mention of disease is made in family save death of mother from consumption; æt. 37.

In the remaining cases of inflammatory disease no illness serious enough to demand medical treatment had occurred.

3 were between 20 and 30	5 were between 50 and 60
6 " " 30 " 40	3 " " 60 " 70
5 " " 40 " 50	

Out of the first collection of 94 cases, in 15 the fatal affection had been preceded by rheumatism in some form. Of these—

1 died of fatty degeneration; æt. 72.
4 of valvular disease, æt. 45, 52, 55, and 50.
4 of inflammatory disease, æt. 49, 44, 45, and 23.
2 of complicating Bright's disease of kidneys; æt. 48 and 59.
In 3 the exact affection was not satisfactorily diagnosed; æt. 52, 58, and 45.
1 was a neurosis.

Thus the cases of valvular disease following rheumatism equalled those of inflammatory nature; but how far dependent upon any previous attack of rheumatism, or influence of the rheumatic poison, it is impossible to decide.

Of the whole number now under consideration (94), 15 died of valvular disease, diagnosed previous to death, and with which no complication is mentioned. 1 was complicated with pericarditis, the ultimate cause of death; 1 with phthisis; 1 with hypertrophy; 1 with disease of the kidneys.

Of those who suffered from this particular disease (valvular) in 4 had the fatal issue been preceded by rheumatism; in 1 by cough for thirty-five years (æt. 77); and in 1 by intermission of pulse, which partly, he was assured by his physician, was owing to dyspepsia (æt. 53); 1 had had violent palpitation at times for six months, and been subject to sick headache thirteen years (æt. 57); 1 had complained long of palpitation, but was assured that it was owing to plethora (æt. 68); another had complained in a similar manner, having also expectorated blood (æt. 50); 1 had suffered from slight dyspepsia (this party's father had died of apoplexy, and his mother of consumption), æt. 60; 1 had suffered from no disease, and no death had occurred in his family save his mother, from consumption, æt 45; 2 others, having never suffered from disease themselves, state, the first, that a brother had died of epilepsy at 48, and another of rheumatism; the second, that the father had died of dropsy, and a sister had died suddenly, æt. 45 and 65.

Of the whole number of valvular diseases, 1 only occurred below the age of 40, and that was at 39; 6 between 40 and 50 (5 of these 45, the other 50); 8 between 50 and 60 (2 of these at 60); 3 between 60 and 70; 1 between 70 and 80. The larger proportion, therefore, died between 45 and 60.

Of the whole number under consideration (94), 18 were from hypertrophy; 12 were apparently uncomplicated with disease of other organ, or other disease of the heart itself. 6 were complicated as follows:—

1 with inflammatory affection of the heart preceded by no disease; æt. 35.
1 with same, but preceded 10 years by scarlatina; æt. 39.
1 preceded by long course of intemperance; æt. 50.
1 with serious valvular lesion, but preceded by no disease of sufficient moment to merit attention; æt. 54.
1 with unusual dilatation, even for this class of affection, was complicated with endocarditis, and preceded by phlebitis three months, at which time, having been forced to great exertion, cardiac disease appeared to develop; æt. 47. A brother of this person died of "some disease resulting in dropsy, and another of phthisis.
1 in whom there existed suspicions of a long course of intemperance, and ten years of suffering from dyspnœa, palpitation, etc., was found to have pulmonary apoplexy; æt. 33.

In only 3 was dilatation at all remarkable, 7 had previous to death certified to a state of uninterrupted health, *i. e.*, so far as medical attention was concerned.

The remaining 11 suffered previous disease as follows:—

1 in whom autopsy revealed Quain's degeneration, had three months before death suffered from bilious colic, followed by jaundice, and on one occasion had suffered severely from palpitation; æt. 39 (merchant).

1 in whom hypertrophy was excessive, had experienced no especial disease, but had noticed that for several months prior to death his pulse had been between 88 and 95; æt. 40 (an editor).

2 had suffered from jaundice and obstructed gall-ducts; 1 of these being accompanied by excessive dilatation; æt. 49 and 53.

1 had had mild rheumatism occasionally, usual pulse 72; æt. 72.

1 had had scarlatina several years before; æt. 39.

1 had had slight cough for a long time; æt. 46.

1 had had nephralgia and calculus 23 years before death; æt. 75.

1 had suffered from dyspnœa and palpitation for a long time; æt. 45.

2 had been intemperate, ages 50.

The only cases among these latter 11 that seem to furnish coincident precursors are the three in whom jaundice occurred.

Of the cases of hypertrophy, 5 occurred between 30 and 40; 7 between 40 and 50; 3 between 50 and 60; 3 between 70 and 80; 3 were accompanied by muscular dilatation; 5 were owing to almost purely muscular hypertrophy; 1 was styled Quain's degeneration; 4 were ordinary fatty degeneration; 5 were indefinite.

One solitary case of softening of the heart occurred. The left ventricle exhibiting peculiar friability, and degeneration (Dr. Peaslee's case); no previous disease or premonitory symptom; death instantaneous; æt. 46.

1 case of atrophy only, heart apparently normal in other respects, no previous disease or premonitory threatening; death very sudden; æt. 47.

1 case of rupture of the heart occurred, the heart being found in condition of fatty degeneration; no previous disease or premonition; æt. 60.

7 cases of the whole number were doubtless neuroses; 3 had suffered from antecedent neuralgia, 1 attributing his neuralgic symptoms to tobacco which he had been obliged to forego; 4 had prolonged premonitory symptoms, the others only suffering a very few minutes; 2 had been subject to dyspepsia; 2 had overheated and over-exerted themselves during the twelve hours prior to death. No disease of heart, lungs, or brain had occurred in the parents of any of these save one, whose mother had died of some cerebral with uterine disease, and brother of cerebro-spinal difficulty, the former a cancerous disease, the latter probably tuberculous.

The ages were as follows: 3 between 40 and 50; 3 between 50 and 60; 1 between 60 and 70. It is worthy of remark that in the many cases of the various affections of the heart detailed, so few had attributed the pre-

monitory symptoms to asthma, since the impression is prevalent to a greater or less degree, that asthma is far less "dangerous" than any cardiac disease, and it is natural for man to under, rather than overrate the danger of his condition.

Out of the 1332 cases in which written testimony was examined, only 3 were ascribed to asthma, and in one, the symptoms indicated serious valvular disease and aneurism of aorta. He had had, however, but one attack of his so-called asthma previous to the fatal one, but had at one time been supposed to be the victim of "galloping consumption;" usual pulse 80; æt. 52; hotel-keeper.

One, a stout robust man, laboured under hypertrophy; he had suffered from no other disease; æt. 50; jeweller.

One had presented no indication of disease of the heart until four days prior to death, and no disease had ever been experienced that at all bore upon the disease. His father died of "asthma;" it is a noticeable fact that these, the only deaths ascribed to asthma, did actually have heart affection complicated with them.

A few deductions may perhaps be made with advantage from the whole number of cases, in regard to the suddenness with which the disease terminated, the autopsies, and the character and completeness of the information elicited in each case.

In regard to suddenness, 22 are reported as "very sudden," "instantaneous," and as having "dropped dead." In some, the time is stated as a few minutes, a few seconds, &c., and in 12 symptoms of approaching dissolution are pronounced wanting; in the remainder, the period of illness varied from a few hours to several years. In regard to autopsies, full information has been filed in writing from the attending physician and those performing the post-mortem examination. In regard to information, especially that relating to personal and family history: this has been given as far as inquiry could elicit it, and where no disease in the family is given, it is distinctly stated that there is none, and has been none of importance.

The cases remaining to be considered are far less complete than the preceding, and are derived from different sources. Out of 737 deaths occuring in the practice of county physicians (all "county cases"), there were 23 arising from affections of the heart, exclusive of the more doubtful; 10 had suffered at times from dyspnœa, palpitation, and, in one case, neuralgic pains in the præcordia. Five of these died under the influence of excitement either from mental causes or violent exertion; the others under no obvious excitement.

Of the whole number, 23, fifteen died suddenly—*i. e.*, within a few minutes after falling. The number of autopsies among these was small, the prevalent disposition being manifest to attribute every uncertain case to some affection of the heart. In all included below, however, there is reasonable freedom from doubt. The ages are as follows:—

1 below the age of 20	1 between 50 and 60
4 between 20 and 30	3 " 60 " 70
3 " 30 " 40	2 " 70 " 80
1 " 40 " 50	7, ages not given.

None of these were inflammatory in nature; 1 was attributed to asthma, 3 to neurosthenia, 1 to hypertrophy and valvular disease. Occupation unknown; family history unknown. It is worthy of remark, that whereas the first 94 cases are from the higher walks of life, these are from the lower; while the following are selected more indiscriminately than either, and from both male and female throughout the community.

Of 300 deaths there were 18 from some disease of the heart, including the usual proportion of inflammatory cases.

Males 10, as follows:—

3 between 20 and 30	2 between 60 and 70
2 " 40 " 50	2 above 70
1 " 50 " 60	

Females 8, as follows:—

1 between 20 and 30	4 between 40 and 50
2 " 30 " 40	1 " 50 " 60

Specific affections not satisfactorily designated.

That the results thus far arrived at in regard to one important point, namely, the age at which the larger number died, may be compared with the usual opinion on the subject, it will be necessary to consolidate the statistics given; upon doing so, we find the following:—

8 between 20 and 30	16 between 60 and 70
20 " 30 " 40	8 " 70 " 80
30 " 40 " 50	15 ages not given.
29 " 50 " 60	

Let this statement be now compared with some available statistics of mortality among adults—of Philadelphia, for example. The records of the Health Office for 1853 show as follows, exclusive of deaths among returned and wounded soldiers, and in the various army hospitals.

There were 6445 deaths, of which number 250 are reported to have died of disease of the heart in some form (3.87 per cent.); a small per cent. when compared with that found above. The following tabular list may show the character of the report:—

232 are reported	"Disease of the heart."
2 "	Degeneration of the heart.
18 "	Inflammation of the heart.

Ages of the first:—

34 between 20 and 30	33 between 60 and 70
35 " 30 " 40	31 " 70 " 80
41 " 40 " 50	11 " 80 " 90
45 " 50 " 60	2 " 90 " 100

Ages of the second:—

1	between	30	and	40	1	between	70	and	80

Of the third:—

6	between	20	and	30	1	between	50	and	60
2	"	30	"	40	3	"	60	"	70
2	"	40	"	50	2	"	70	"	80

Making a total of

40	between	20	and	30	36	between	60	and	70
38	"	30	"	40	34	"	70	"	80
43	"	40	"	50	11	"	80	"	90
46	"	50	"	60	2	"	90	"	100

In regard to the cases of apoplexy, or similar affection of the brain, it is proper to state that the 1332 deaths exclude all doubtful, and *all in whose families more than one case had previously occurred.* There were 10 mentioned as congestion of the brain, of which number 3 were from coup de soleil; 3 were stated simply to have been sudden; 6 were sick from thirty hours to five days; 1 was ill ten days.

In 74 the fatal stroke was the first one. The suddenness varied considerably, being from a few moments to hours, and even months, more dying on the third day than any other (20 per cent.). In four cases only had either parent or any member of the family suffered from any similar disease. In one a brother was insane; in one a sister had died of brain-fever; in two some members of the family had died of heart-disease. 16 only were stout and inclined to corpulency; 26 were stated to be not corpulent (nor florid), and of medium size and weight; 8, beside the latter, are stated to be thin, slender, &c. In a majority of the remainder there is evidence that they were not especially inclined to corpulency; 7 cases were preceded by rheumatism; 7 had been subject to headache of considerable severity and frequency. Many had complained of dyspepsia and hemorrhoids, and several had suffered from pulmonary hemorrhage; but in only three had there been any suspicion or symptom of any cardiac complication. Many suffered partial or complete paralysis previous to death.

If we now compare the above result with statistics from other sources, as before, we find the following (mortuary record of Philadelphia for 1863), exclusive of deaths among soldiers, and enumerating adult deaths only: Apoplexy, 186; congestion of brain, 133—total, 319.

Of those who died of apoplexy, there were

9	between	20	and	30	48	between	60	and	70
29	"	30	"	40	27	"	70	"	80
24	"	40	"	50	12	"	80	"	90
40	"	50	"	60	1	"	90	"	100

Of those who died of congestion, there were

41	between	20	and	30	16	between	60	and	70
29	"	30	"	40	9	"	70	"	80
24	"	40	"	50	2	"	80	"	90
11	"	50	"	60	1	"	90	"	100

The latter being, as will be seen at a glance, about equal to the former up to the age of 50, when the former increases somewhat as the latter decreases. The per cent. of deaths by the Philadelphia tables is 4.9; by present cases 5.5.

ART. V.—*Contributions to the Statistics of Human Growth.*

By W. S. W. RUSCHENBERGER, M. D., U. S. Navy.

DURABLE physical efficiency is an essential qualification of all persons selected to serve in the military establishment of the nation. For this reason it is desirable to ascertain the reliable indications of physical strength and longevity in adolescents and adults of different ages. Amongst those most relied upon in the examination of recruits for the army and navy are stature, weight, and pulmonary capacity. A standard of height and weight is established for comparison by most nations. Those who fall below it are not received into military service.

The total height of an individual is not a positive indication of strength or power of endurance. Dr. B. A. Gould states, in a paper "on the Stature of American Soldiers," read at a meeting of the "National Academy of Sciences," that the "tall men did not wear as well as the shorter."

It seems probable that the length of the cerebro-spinal column may be a more valuable element in estimating the physical qualifications of a recruit than the total stature. Observation has led me to conjecture that, as a rule, men of average height, made up of a long trunk and comparatively short lower extremities, possess greater power to endure with impunity great labour and exposure to vicissitudes of all kinds than men who have comparatively long lower limbs and short trunks. A long and otherwise fully developed trunk affords more space for the accommodation of organs essential to life than one of smaller dimensions. The size of the contained organs is proportionate to the capacity of the cavities provided for them; and it may be assumed that, all things being equal, the size of an organ is a measure of its power.

To ascertain proximately the difference between the length of the cerebro-spinal column of boys of the same stature, the candidates for admission into the Naval Academy at Annapolis, Md., in July and September, 1866, were measured.

During the examination of July 164 candidates, between the ages of fourteen and eighteen years, were weighed and measured carefully to ascertain the height of the perineum, of the shoulder, and of the vertex. In this mensuration I was assisted by surgeons David Harlan and R. C. Dean and assistant surgeon James M. Flint of the navy.

Each candidate was perfectly nude during the inspection.

In September, 65 candidates were measured in the same manner at my request, by surgeon Harlan, aided by passed-assistant surgeon Joseph Hugg, and assistant surgeons John S. Ramsey and Wm. F. Terry of the navy. Twelve of these candidates had been measured in July.

The measurements of these 217 boys, or adolescents, have been collated and arranged in tables. In the first those of the same stature are classed together, in the second those of the same age, and in the third the measurements in July and September of the twelve candidates twice examined are contrasted, showing the progress of growth in two months.

The first table shows that the length of the cerebro-spinal column in adolescents of the same stature differs from one-half to three inches. One candidate, whose stature is $73\frac{1}{4}$ inches, has a cerebro-spinal column a half inch shorter than another whose stature is 68 inches, or $5\frac{1}{4}$ inches less. It is probable that similar differences will be found to exist among adults of the same stature.

The average weight to the inch of stature of the 216 weighed is 1.65 lbs. The lowest average weight to the inch of stature is 1.17 lbs., and the highest 2.10 lbs. Of the 216, only eight averaged two pounds and upwards to the inch of stature. From these measurements it may be assumed that the fair standard weight of candidates for admission into the Naval Academy should be one pound and a half to each inch of stature. For example, an individual sixty inches in height should weigh ninety pounds.

The difference of circumference of the chest, measured over the nipples with arms pendent, when fully expanded and at the close of expiration, varied from $1\frac{1}{4}$ to 4 inches. There seems to be no relation between pulmonary capacity thus measured and stature or weight. In some instances the heaviest, and in others the lightest of the same stature, had the largest thoracic circumference and expansibility.

The second table, in which the candidates of the same age are classed together, shows that growth is very irregular, and that age cannot be taken as an indication of the stature of adolescents. The extreme difference of the height of eight boys of the age of 16 years and 2 months was found to be $12\frac{1}{2}$ inches; and of fourteen boys aged 16 years and 6 months the difference between the shortest and tallest $9\frac{1}{4}$ inches. In the first example the shortest and tallest were both born in New York, and the second, the shortest, was born in Indiana, and the tallest in Ohio.

Possibly the growth-impulse impressed upon the germ at the moment of conception continues, *cæteris paribus*, until growth ceases. There is reason to conjecture that this growth impulse is dependent, in a degree at least, upon the age and vigour of the parents at the time of impregnation.[1]

The third table shows that, in two months, eleven boys increased in weight, varying from two to nine pounds, and also in thoracic circumfer-

[1] See Fecundity, Fertility, and Sterility, and allied topics. By J. Matthews Duncan. 8vo. Edinburgh, 1866.

ence and expansibility, the increase varying from one quarter of an inch to four inches. In one the measurements indicate loss of weight with increase of stature and pulmonary capacity.

The average height and weight of the human body at different ages has not been accurately determined.

Mr. Danson[1] gives the average height and weight of 100 boys of 18 years of age, as follows :—

Age.	Average.	Maximum.	Minimum.	Maximum over average.	Minimum under average.	Maximum over minimum.
	HEIGHT.					
years.	inches.	inches.	inches.	inches.	inches.	inches.
18	64.34	71	58½	6.66	5.84	12½
	WEIGHT.					
	stone. lbs.	stone. lbs.	stone. lbs.	stone. lbs.	stone. lbs.	stone. lbs.
	8 10.79 or 122	10 13 or 153	6 6 or 90	2 2.21 or 30	2 4.79 or 32	4 7 or 63

Quetelet[2] gives the following averages of Belgian recruits :—

Age. years.	Height. inches.	Weight. lbs. avoir.
16	57	109
17	64.3	116
18	65.2	126

Mr. Danson thinks "there is good reason for supposing that even among men of the same class and the same habits, in the same locality, those who attain a given age in one year have not the same, or very nearly the same, average height or weight, as those who attain the same age in years preceding or following." These variations have been attributed to scarcity or abundance of food in the birth years of the individuals measured during adolescence or adult age.

Mr. James Harrison carefully examined 1270 young persons of both sexes, employed in certain English manufactories, with a view to ascertain their influence on health. The following data are derived from his measurement of stature :—[3]

[1] Statistical observations relative to the growth of the human body (males) in height and weight, from eighteen to thirty years of age, as illustrated by the records of the Borough Gaol of Liverpool. By J. T. Danson. Published in the *Journal of the Statistical Society of London*, vol xxv. p. 20, March, 1862.

[2] Taken from *A Manual of Practical Hygiene*, prepared for use in the medical service of the army. By Edmund A. Parkes, M. D., F. R. S., etc., second edition. London, 1866. Page 501.

[3] Edinburgh Medical and Surgical Journal, 1835, vol. xliv. page 425.

AGE.	NUMBER EXAMINED.	AVERAGE STATURE inches.
From 13 to 14	192	54½
" 14 " 15	197	55
" 15 " 16	186	58
" 16 " 17	131	60¾
" 17 " 18	151	60¾

The average stature of persons of 18 years, resulting from the observations of Mr. James Harrison, is 60¾ or 60.75 inches; the measurements by Mr. Danson give 64.34, and those by Quetelet 65.2.

The average height and weight of American adolescents, according to the measurements at the Naval Academy, are greater than the averages given by the authors named, as the following table shows:—

	STATURE.				WEIGHT.		
Age.	Number examined.	Minimum height.	Maximum height.	Average height.	Minimum weight.	Maximum weight.	Average weight.
		inches.	inches	inches.	lbs.	lbs.	lbs.
14 to 15	28	55¾	67¾	60.70	63	121	97.44
15 " 16	31	54½	69	63.87	73	136½	107.93
16 " 17	82[1]	58½	73½	64.24	81½	145	110.20
17 " 18	73	61¼	69½	65.44	88	137	115.33

ART. VI.—*Case of Axillary Aneurism; Successful Ligation of Left Subclavian between the Scaleni; Suppuration of the Tumour; Hemorrhage on the 43d day; Gangrene of Limb; Ligation of Subscapular Artery; Amputation of Arm at upper third; Hemorrhage on 67th day; Removal of Humerus at the Joint; Recovery.* By THOMAS GEORGE MORTON, M. D., one of the Attending Surgeons of the Pennsylvania Hospital, and one of the Surgeons of the Wills (Ophthalmic) Hospital, Philadelphia. (With four wood-cuts.)

THE following case of aneurism involving the axillary artery has been reported at considerable length, on account of the comparative rarity of the disease, as well as the operation performed; while the very interesting series of events which followed, and secondary operations which were required, render some minuteness unavoidable.

Only two cases have been recorded where the subclavian artery has been ligated in this city, and both of these operations were performed for the

[1] The weight of one of these was not noted; therefore the weights of eighty-one were used in computing the average weight.

relief of aneurisms of traumatic origin. The first has been reported by Professor Gibson, in 1828,[1] the axillary artery was ruptured during the reduction of a dislocated humerus of nine weeks' standing; the subclavian was ligated outside of the scalenus, erysipelas and incipient gangrene followed, and the patient died on the seventh day.

The history of the second case was read before the College of Physicians, by Dr. H. E. Drayton,[2] in October, 1859; the patient was admitted into the Episcopal Hospital, with "obscure injuries about the shoulder and side caused by a recent fall;" a pulsating tumour rapidly developed, ligation of the subclavian was performed which resulted fatally from pyæmia on the twenty-second day.

During the late war the subclavian was ligated more frequently (excepting the carotid, femoral, and brachial) than any other artery;[3] one of these operations was performed by myself, at the "Mower" hospital, Chestnut Hill, during my service as consulting surgeon; sloughing and hemorrhage followed a gunshot wound of the armpit; the axillary was tied; hemorrhage recurring, I ligated the third portion of the subclavian.

I am under obligations to Dr. Barnes, Surgeon-General U. S. A., for the following report, furnished me by Brevet-Major G. A. Otis, Assistant Surgeon U. S. A., Curator of the Army Medical Museum, of the operations performed in the Military Hospitals in this Department.

"Of the thirty-five cases of ligation of the subclavian recorded in Circular No. 6, S. G. O., 1865, seven occurred in Philadelphia. Six of these cases terminated fatally.

"The operators were Gross, Coolidge, Hopkinson, Kennedy, Levis, Wells, and yourself. The successful case was Levis, done at Christian St. (Hospital). Primary amputation of the arm, June 10th, 1864, on the field; ligation of axillary by Dr. Boyd, July 25th; secondary hemorrhage, ligation of subclavian over first rib, Aug. 8th; discharged cured, April 6th, 1865.

"Your case was a secondary ligation at 'Mower,' terminating fatally July 1st, 1864. It furnished specimen No. 2545, to the Army Medical Museum.

"A fatal case, not recorded in Circular No. 6, occurred at Philadelphia, Sept. 17th, 1864, at Satterlee Hospital."

Mr. Crisp,[4] in a table of 551 spontaneous aneurisms, reports 18 only of the axillary artery; and among 364 preparations of aneurism, carefully examined by him in the various museums of London, 8 only were found of the axillary artery.

Dr. Wm. Pepper, Curator of the Penna. Hospital Museum, informs me that he has been unable to find a single specimen of spontaneous axillary aneurism in the museums of this city.

CASE. Francis McKoen, aged 51, a stone-mason, born in Ireland, was brought to the Pennsylvania Hospital, in an ambulance, on the 7th of

[1] American Journal Med. Sci., May, 1828, p. 136, with two plates.

[2] American Journ. Med. Sci., vol. xxxviii. p. 402, 1859.

[3] Circular No. 6, S. G. O., 1865, p. 78.

[4] Diseases of the Bloodvessels.

November, 1866, and admitted into the lower surgical ward on account of a large pulsating tumour of the left axilla.

About the first of June, the patient's attention was directed to an unpleasant tingling and numb sensation, along the outside of the arm and forearm, and especially in the course of the little finger, "as if the parts were asleep; this gradually increased, and soon the entire limb to the region of the deltoid became involved. In the latter part of the month of August, he discovered while bathing a tumour in the armpit about the size of a chicken egg, which was painless on pressure, and gave such a trifling amount of pain, except when the arm hung down, that he was able to perform as usual his heavy work until the early part of September, when he sought medical assistance.

About the first of October, the pain in the arm grew worse, and the tumour increased rapidly in size; soon the axilla was filled up, and with this increase, intense pain throughout the entire limb was experienced, which was afterwards of the most excruciating character; loss of all sensation and motion followed, with great œdema of the arm; powerful opiates were taken, and sedative lotions to the tumour afforded little or no relief.

Fig. 1.

On examination a strongly pulsating tumour was found, see Fig. 1, which distended the axillary region to such an extent that the arm was forced away from the side, and which also produced considerable elevation of the shoulder; the tumour extended across the chest towards the sternum, and could be felt above the clavicle, but the subclavian space seemed uninvolved. The skin covering the axillary portion of the tumour was so attenuated that bursting of the tissues seemed imminent; already several ulcerated points gave vent to a few drops of softened clot of blood. The temperature of the arm, and especially the hand, was considerably diminished, and no pulse could be felt in the radial or brachial arteries; the limb was at least double the natural size, on account of the œdematous effusion. The least movement of the arm which had been devoid of all sensation and voluntary motion for three weeks, produced intense pain, which was referred principally to the region of the shoulder. The subclavian artery was found deeply situated, and when compressed upon the first rib entirely controlled all pulsation and thrill; the former extended to every portion of the tumour and could be seen at a considerable distance, while the latter was

most distinct at the more prominent portion of the axilla. The disease was evidently aneurism involving the axillary artery, and from the history appeared to be of that variety described as consecutive diffused, the effusion resulting from the rupture of a circumscribed aneurism.

While the disease was increasing, it was evident that before long the patient would perish from hemorrhage, unless the flow of blood through the tumour were arrested.

Since spontaneous coagulation in the aneurism was hardly possible, and operative measures alone held out a chance for what otherwise would soon certainly prove fatal; it became a question as to the course to be pursued.

Amputation at the shoulder-joint with ligation of the axillary high up, would under some circumstances have been proper, since it was likely that the arm would never be of service, on account of the permanent injury which the nerves had sustained from the pressure of the tumour; but the risks from hemorrhage would be great, for the subclavian was deeply situated, and pressure upon it could hardly have been depended upon to control hemorrhage while seeking to ligate after an amputation.

The plan recommended by Mr. Syme[1] of making a free incision into the tumour, and evacuating the contents, first controlling the flow to the part by making an incision along the outer edge of the sterno-mastoid muscle, through the platysma myoides and fascia of the neck, so as to allow a finger to be pushed down to the situation where the subclavian artery issues from, and under the scalenus anticus, and lies upon the first rib, and then ligating the axillary above and below the seat of disease, did not appear practicable in the present instance, on account of the very great uncertainty as to the situation of the original disease, whether above, beneath, or below the pectoralis, the great size of the tumour, and marked pulsation in every part. While the tumour being above the clavicle and close to the third part of the subclavian, ligation of this vessel would likely be found necessary after all. Ligation of the subclavian was decided upon as offering a reasonable chance of success; although it seemed quite probable that suppuration of the tumour would follow, since the blood was simply poured out into the tissues from the ruptured aneurism, a laminated clot not having formed except perhaps in that portion of the tumour which formed the original aneurismal disease.

The patient was placed upon a good nutritious diet, and to diminish the action of the heart, five drops of the tincture of veratrum viride were ordered four times a day.

Nov. 14. Assisted by my colleagues, Drs. Hunt and Agnew, before the clinical class of the hospital I commenced the operation by making an incision along the upper part of the clavicle four inches in length, the skin having been drawn down over the chest; the external jugular vein swelled up enormously and seemed as if it might give some trouble. Two small arteries required ligation; then with careful division and tearing the subclavian triangle was soon exposed, the omo-hyoid was drawn upwards and the scalenus anticus traced down to the first rib; the artery now appeared to lie immediately under the finger; with a little scratching the vessel itself seemed to be at the bottom of the wound. An aneurismal needle with ligature attached was passed, not tightened, but merely drawn upwards when

[1] Med.-Chir. Trans., vol. xliii. p. 137.

it was found that the ligature had been passed under the lower cord of the plexus of nerves which laid above the vessel. The artery was now felt more deeply situated, the ligature was withdrawn and the vessel found about a half inch beyond, but the aneurismal tumour being in close proximity, it was determined to divide the scalenus and to place the ligature upon the artery in its second portion. The division of this muscle was readily accomplished, and the ligature was placed under the vessel, being more than three inches below the surface. With tightening of the ligature there was immediate cessation of all sound and pulsation. The wound was brought together with four leaden sutures, the skin moistened with olive oil, and dry charpie placed on the parts, with a bandage to keep the arm and dressings in place.

The patient was somewhat exhausted from the protracted operation, which lasted nearly one hour; but soon rallied after the administration of some brandy and water; there was hardly any blood lost during the operation, and fortunately no venous trunk was wounded.

Nov. 14. Evening: pulse 132; quite comfortable; has been asleep; had no pain; taken freely of cold milk and arrowroot; about a teaspoonful of blood has oozed since noon; half a grain of morphia to be taken at 10 P. M. and to be repeated if necessary.

15*th.* Pulse 124; skin natural; tongue a little coated; slept well; general condition good; no swelling or redness about the wound. Evening: The bandage was cut away and fresh charpie applied, the skin being oiled; wound looks very well.

16*th.* Pulse 120; very comfortable; tongue a little thick; sleeps much of the time; has had no pain in the arm since the operation; small quantity of healthy pus exuding by the side of the subclavian ligature; has a slight cough.

17*th.* Pulse 110; skin and tongue good; removed the sutures and found the wound united; cough, but no expectoration; some redness in the tissues about the incision.

18*th.* Pulse 110; doing well; radial pulse detected but very feeble; the œdema has entirely left the hand; says he "feels the blood coursing to the fingers." Evening: Pulse 106; no swelling about the neck; the tumour is subsiding.

19*th.* Pulse 108; sleeps well at night; some mucus expectorated; ordered an enema. Evening: Bowels freely acted and gave great relief; half a grain of morphia at bedtime.

20*th.* Pulse 100; general condition excellent; considerable hoarseness and cough; œdema disappeared from the arm.

21*st.* Doing well; the morphia quieted the cough and produced sleep; tongue clean; pulse 100; discharge healthy.

22*d.* Pulse 96; one of the ligatures which secured the small artery divided during the early part of the operation, came away this morning.

24*th.* Pulse 96; the other superficial ligature was removed this morning; good union in the wound and no swelling about the neck; the tumour has diminished very much in size, is quite soft, and looks as if it would suppurate.

25*th.* Pulse 92; the cough which has troubled him for several days has assumed a paroxysmal character, coming on at long intervals and with no expectoration; percussion and auscultation reveal no disease in the chest. The ribs below the clavicle can now be felt, and the head of the humerus can also be traced on its anterior face; after removing some dried

blood and matted hair from the axilla, an ulcerated condition of the skin was found about an inch in length and half an inch in width, through which could be seen a mass of clotted blood; from this point on the day of operation a few drops of blood had exuded, showing the necessity for early operative interference.

26*th.* Rapid diminution of the tumour; has free perspiration; pulse 86; ordered six grains of quinia daily; no collection of pus in the wound; spasmodic cough continues, probably due to irritation of the phrenic nerve caused by the proximity of the ligature.

Dec. 2. 9.30 A. M. Ligature came away this morning—18 full days; cough, which has been decreasing for the last few days, has now almost vanished; complains of pain down the arm as far as the elbow; taken no stimulants since the operation; the tumour presents signs of suppurating; small clots are being discharged through the opening in the axilla, which has been enlarging.

5*th.* Pulse 84; passed best night since the operation; the axillary tumour is subsiding, and discharging about a tablespoonful of softened blood daily.

7*th.* The axillary wound discharging more, and large clots are removed in each dressing; able to sit up in bed; arm supported on pillows; one bottle of porter daily ordered.

12*th.* 29th day. Hardly any discharge from the wound of operation; free discharge from the axilla, and pus observed with the softened clots; general condition good; pulse 84.

14*th.* The suppuration in the tumour has been increasing for the past two days, and the axilla has an inflamed appearance; the patient seems restless and the pulse is more quick to-day; wound of operation entirely closed up and parts firm; some exhaustion; ordered an ounce of whiskey three times a day; appetite is not so good as heretofore.

15*th.* This morning the entire contents of the tumour, consisting of fetid broken-down clots and pus, amounting to nearly a quart, came away on removing the dressings; some of the clots were as large as a hen's egg; the tumour entirely subsided, but not one drop of arterial blood came away; the odour arising from the discharge and the drain has materially affected the patient, and the stimulants were consequently increased; two bottles of porter daily and half an ounce of brandy every three hours, with beef-tea and eggs.

16*th.* Copious discharge from wound; general condition more favourable; more clots came away in the dressings; pulse soft and good; wound washed with a solution of permanganate of potash.

18*th.* Discharge assuming a more purulent character and less in amount during the past few days; skin of the arm when friction is applied assumes a natural healthy hue; the axilla when cleansed revealed deadened nerves and vessels and portion of the original sac of the aneurism, contracted and hard to the touch, lying high up in the cavity.

26*th.* On making slight traction upon a protruding portion of sloughing nerve, it readily came away, and with it a bundle of small nerves about two inches in length; the main portion of nerve measured six inches, and was excessively offensive; good healthy granulations were observed in all parts of the axillary space and the discharge entirely purulent.

27*th.* 4.45 A. M. Francis was awakened by a feeling of heat on his left side, and sliding his hand along the chest, discovered blood; Dr.

Williams, the resident surgeon, was immediately summoned, and found that a fearful hemorrhage had occurred through the axillary wound, probably exceeding two quarts; the axillary space was filled with clots, while the blood had coursed along the mattress and soaking through it had reached the floor, making a large pool; on moving the arm, seeking the origin of the hemorrhage, a fierce gush of blood followed; Dr. Williams controlled the bleeding by forcing into the cavity a plug of lint soaked in the persulphate of iron, and then applied the horse-shoe tourniquet, making firm pressure, which forced the plug firmly within the axillary cavity. Excessive prostration followed this with two attacks of syncope, from which the patient rallied after vigorous stimulation; the pulse was for several hours very weak, the skin blanched and covered with moisture; the left arm very white and quite cold. Evening: Circulation in left arm partly re-established and some warmth in the fingers; no hemorrhage since morning, the pressure of the tourniquet not having been taken off; has been able to take all the nourishment and stimulants, the stomach remaining perfectly sound; is comfortable, and disposed to sleep.

28*th*. Being unable to go to the hospital on account of severe indisposition, Dr. Williams writes: "McKoen passed a comfortable night and is in good condition this A. M., at present asleep (7 A. M.), so cannot particularize as to pulse, &c."

Evening: Dr. Herbert writes: "I have just seen the man, and I think he is doing very well; quite a good pulse, no hemorrhage, and is very comfortable."

29*th*. Continues same, but very weak; has taken every hour small doses of acetate of lead and opium; alternate hours stimulants with strong beef soup and milk; no hemorrhage.

11 P. M. Had a slight hemorrhage amounting to two ounces controlled by re-adjustment of the tourniquet, which had worked somewhat out of position.

30*th*. 7 A. M. Hemorrhage amounting to an ounce escaping by the side of the tourniquet; had a violent chill; 9.30, hemorrhage; profuse perspiration; quick pulse; tongue moist; tissues about the shoulder much swollen from the pressure and the collection of blood under the skin; bleeding controlled by the compressor, which when loosened in the least permits the blood to gush forth.

12.30. A consultation was called in regard to the practicability of securing the bleeding vessel or amputation at the shoulder-joint, as it was evident from the drain the limb would perish; during the consultation the patient was seized with a violent chill, which necessitated an abandonment of all operative interference. Evening: Considerable collection of air in the tissues about the shoulder. To relieve this I passed into the part an exploring needle, and let escape some very fetid gas; following this, arterial blood jetted forth, and pressure was required to arrest it; the space vacated by the air was soon filled up by blood; this increased the pressure upon the shoulder and gave intense pain, which was only relieved by morphia.

31*st*. 48th day. Another violent chill; entire surface becoming purple, followed by hemorrhage; pulse very feeble; tongue exceedingly dry; shoulder greatly swollen; firm pressure required to control the hemorrhage; has peculiar sickish sweet smell indicative of pyæmic involvement; very sallow; surface clammy; the continued drain of blood has so much impaired

the vitality of the left arm that signs of local sphacelation are beginning to appear; the hand is very cold and has a leaden appearance.

1867. *Jan.* 1. Another hemorrhage; the original plug being still in the axilla, but on the slightest movement of it the blood gushes out so furiously that in the patient's weak state it is entirely out of the question to attempt to remove it to seek for the origin of the flow; continued stimulants and morphia.

2*d.* Another hemorrhage, but stopped by placing an additional plug soaked in sol. persulph. iron; patient almost exhausted; tongue perfectly dry; can hardly articulate; evidently sinking, but able to take his nourishment.

5*th.* Had another hemorrhage, but slight; during the last three days he has continued gradually to fail, and for the last forty-eight hours death has, in fact, seemed inevitable; sphacelation of arm and forearm complete; the only redeemable feature is that he can swallow and retain food; pulse 140; there seems to be a line of demarcation forming at the shoulder; no odour from the arm, which seems drying up; if any change has taken place, it is for the better; has been using glycerine on the tongue, and it is a little less dry; and some signs of pus seen around the compress in the axilla; the pressure of the pad of the tourniquet on the top of the shoulder has caused a deep slough at that point; bowels opened by an injection; slackened up the tourniquet, but did not disturb the original pad. Evening: On withdrawing the fetid cloths exterior to the pad to make the parts a little more clean, hemorrhage again ensued. I now determined, although it was night, to examine the axilla and ligate if possible the bleeding vessel; accordingly, I removed the pad which had originally been inserted, and a fearful hemorrhage followed, but, forcing my fingers deeply in the wound, this was arrested; with the greatest difficulty, after an hour of the hardest work I ever performed, two fingers being constantly applied to the source of bleeding, the least relaxation being followed by a gush of blood, I finally succeeded in passing two ligatures deeply under the gangrenous tissues, the one above and the other below the bleeding vessel, which seemed to be the subscapular, supplied through the collateral circulation; on tightening these all hemorrhage ceased; considerable pain followed, and was probably due to the ligature including some portion of nerve; but this it was impossible to avoid. I was only too thankful to see the ligatures in place; the patient was almost dead from this protracted and painful procedure, but very hopeful and re-assured by the cessation of the bleeding, was willing to undergo anything for life; a chill threatened to come on which was warded off by a free use of brandy and hot drinks. While working in the sloughy cavity I found pus exuding in all directions, but especially from the region of the shoulder-joint, and from the great pain in that locality I felt convinced that the slough or the pressure of the tumour had involved the joint.

6*th.* Pulse quick; tongue dry; removed the charpie from the axilla, and there was no trace of hemorrhage; takes stimulants and nourishment well; the line separating the dead and living part more complete.

7*th.* Pulse weaker and more rapid; tongue dry, and copious perspiration; poultice applied over the shoulder.

9*th.* Pulse quick and very weak; tongue dry and features pinched; voice feeble and hoarse; never refuses nourishment; keeps up wonderfully.

10*th.* More comfortable to-day; two movements of the bowels during the night; good pus in the axilla, and the cavity seems contracting;

believing that he could take an increased amount of nourishment, I ordered one raw egg every second hour, day and night, with half an ounce of brandy.

11*th*. Has taken one dozen eggs since yesterday, and relishes them; there is an increased vitality in the tissues in the vicinity of the gangrenous arm.

12*th*. Sixtieth day and patient more comfortable; tongue more disposed to be moist; one pint of champagne ordered additional.

16*th*. Better; the line of demarcation is deep and fully formed; there is very little odour; the arm drying up, the fingers shrivelled; decided that no attempts should be made to remove the part until the patient seems to suffer from its presence; has still a rapid pulse and hurried respiration; tongue soon becomes dry when sleeping, although it has lost its extreme dry and cracked condition; it is now twenty days since the first hemorrhage, and twelve since the last, and forty-six since the separation of the subclavian ligature.

18*th*. Has had some cough for the past few days; but general condition so good that I concluded to remove the dead member; cutting through the dried tissues following the line of separation, the limb was soon taken off, the bone was sawed through a little above its middle; the remaining portion of the humerus appeared entirely devoid of vitality, and will require removal at some future time.

20*th*. Pulse and skin better; gaining strength rapidly; has taken one hundred and twenty eggs during the past ten days, and they have been of great service; ordered them less frequently.

21*st*. This morning the attendant observed Francis' face become very pale, and on examination another hemorrhage was found to have taken place. Dr. Williams found him exceedingly weak; scarcely any pulse; the armpit was again plugged with charpie and Monsel's salt, and the tourniquet readjusted. 11 A. M. I found him excessively prostrated and hardly expected him to revive; he came up well under increased stimulants; on removing the plug from the axilla I found blood oozing from some small vessels about the neck of the humerus, which proved to be the circumflex humeri, which have sloughed; continued the iron and pressure.

26*th*. Doing well; granulations pale; Monsel's salt applied to site of the last hemorrhage.

28*th*. Considerable pain on the top of the shoulder; while pressure upon the part forces pus into the axilla in considerable amount.

Feb. 1. Tissues about wound contracting very well; granulations red, and pus healthy; is sitting up each day when the wound is dressed; no hemorrhage.

5*th*. At 12 o'clock noon Francis had a violent chill, which was followed by fever and sweating, and appears due to the irritation consequent upon the collection of matter in the shoulder-joint, and which has been collecting more of late, and which will soon demand an opening; takes gr. xvj quinia daily.

11*th*. Had a very bad night, and suffered greatly from the shoulder, which is exceedingly painful. 4 P. M. Assisted by Dr. Hunt, the patient having been etherized, I grasped the denuded portion of humerus, and, in rotating the bone, the shaft came away, leaving the head in the socket; an incision about three inches in length was made from the most prominent portion of the head of the bone to the axillary wound; its

removal was quickly accomplished; the bone was surrounded by pus and some granulations observed about the cavity; the attachments of the muscles about the neck of the bone had disappeared from ulceration, and it was so loose that hardly any cutting was necessary. There was free oozing, but no arterial jets; about ten ligatures were applied and the cavity for safety filled with charpie, moistened with the solution of Monsel's salt. The bone removed was very offensive, and had evidently undergone absorption from the original pressure of the tumour, as well as from the action of the pus, being furrowed out and much absorbed in places; no unpleasant effects followed the administration of the ether.

14*th*. Doing well; lint soaked in lime-water placed in the cavity, which is granulating up nicely; sixteen grains of quinia taken daily with porter and English ale.

15*th*. Doing well; gaining each day, and far better since the operation of the eleventh.

19*th*. Ligatures all away; glenoid cavity filling up rapidly; general condition excellent; the tissues from the upper and outer portion of the arm are approximating and covering up the axillary opening.

21*st*. Discontinue the quinia and substitute the elixir cinchonæ.

28*th*. Allowed to be about; shoulder contracting. One hundred and seventh day since first operation; gaining strength daily; discharge much diminished, and perfectly healthy.

March 4. Has been up and walking about for several days past; wound dressed once a day; one or two strips of plaster keeps the large flap in its place, and union has almost entirely taken place.

9*th*. Discharged; wound almost well; one hundred and fifteen days since the subclavian ligation.

Remarks.—In the above case it will be seen that the disease came on insidiously, and probably existed for several months prior to its detection, the patient, however, continued to perform his arduous duties, and only discovered the tumour by accident; no serious trouble arose until after its rapid enlargement, when intense pain, loss of voluntary motion and sensation became prominent symptoms. The aneurismal sac had evidently much enlarged, softened, and then burst, when the blood became diffused into the adjacent loose tissues, which permitted the tumour to enlarge with rapidity.

The ligature was placed on the artery of the left side and between the scaleni, and came away on the eighteenth day with no difficulty following; the tumour sloughed, and on the forty-third day the first hemorrhage occurred during sleep, which amounted to more than two quarts, and almost proved fatal; the day previous at least six inches of one of the large nerves of the axillary plexus came away, which showed that a considerable portion of the axilla was sloughy and considerably undermined. Considering the extreme prostration which followed the hemorrhage, it was not practicable to withdraw the compress from the axilla to seek for the vessel which had bled until reaction was fully established.

Within forty-eight hours a violent chill came on obliging a delay, and an

indefinite postponement of all operative measures; hemorrhage after hemorrhage followed in spite of the axillary pad and compressor, the least relaxation of which allowed arterial blood to escape. From the 27th of December to the 5th of January, ten hemorrhages occurred; the last, which was of considerable amount, left the patient in a fearfully exhausted state. The bleeding vessel, evidently the subscapular, was secured; although pyæmic symptoms were very marked, yet under vigorous stimulation and increased nourishment, the patient rallied, and soon was doing well; there was no further trouble until the circumflex humeri arteries sloughed, when a violent hemorrhage brought the patient to death's door; again he rallied and was soon in as good a condition as before.

The first few hemorrhages so drained the patient of blood, that the arm, all along but feebly supplied by the collateral circulation, lost its vitality, a violent chill being the premonitory symptom, while the pressure on the top of the shoulder, which was kept up during many days, obstructing the collateral circulation through the transversalis colli and supra-scapular vessels, hastened the death of the limb.

During the entire process of sphacelation there was very little odour arising from the part, the arm shrivelled up, and had a mummified appearance, the line of demarcation formed along the inner edge of the deltoid muscle and running up its outer edge for about two inches, and then backwards to the wound of the axilla.

When the patient began to suffer from irritation consequent upon nature's endeavours to remove the part, the sphacelated limb was removed, care being taken not to touch any of the living tissues, while the bone was divided considerably below the line of separation.

Fig. 2.

After the ligation of the subscapular I examined the sloughing axillary cavity, and found the aneurismal sac lying close to the clavicle; it was contracted, very dense, about three inches in length and one in breadth, and had withstood ulceration; no evidences of sac existed in any other portion of the cavity.

Abscess about the head of the humerus appearing, the remaining portion of bone was removed, Fig. 2, which was much softened; all the attachments of muscles and ligaments had given way, and little cutting was required. Convalescence was now very rapid and almost magical, for within four weeks the patient was dismissed the hospital comparatively well.

The following table exhibits the pulse and temperature of the right and

left side before and after ligation, and was prepared by Dr. Williams, the resident physician.

Date.	Pulse.	Right Axilla.	Left Axilla.	Right Hand.	Left Hand.
Nov. 8, evening,	108	100¾	100¾	101	96½
" 9, "	112	100½	100½	100¾	96½
" 10, "	110	100	100	99¼	98¾
" 11, "	112	99½	100	99¾	97½
" 12, "	116	100	99¼	98½	97
" 13, "	116	99½	99½	99	96½
" 14, 3 P. M.,	124	99	96½	98¾	95¼
" " 7 "	132	102½	100½	102	102
" 15, A. M.,	124	101	102½	100½	102

An interesting feature in the above table is the rapid rise in the temperature in the limb after the ligation. The power of endurance and the tenacity of life, as shown in this remarkable case, were greater than in any instance which has ever come under my notice; to the continued ability of the patient, even in periods of excessive exhaustion, to take and retain any amount of nourishment and stimulants may be in a great measure ascribed the successful issue. During a period of ten days of greatest prostration more than one hundred and twenty raw eggs were taken, with each half an ounce of brandy, besides each day the usual allowance of three quarts of milk and other nourishment in proportion.

The loss of the limb was deplored at the time, but had the patient recovered with the arm it would have been of no use, since many of the nerves had sloughed away, while others were so much injured by pres-

Fig. 3.

Fig. 4.

sure and inflammation of the adjacent parts, that it would have been a useless appendage. Should a similar case again present, I would be inclined, after the ligation of the subclavian, to make a free incision, evacuate the

tumour, tie the axillary above and below the aneurism, if practicable, and hasten to bring about a healthy condition of the cavity occupied by the effused blood; and should the pressure of the aneurism have induced caries of the joint, and permanent injury to the axillary nerves, amputation at the articulation would then be required.

The accompanying figures from photographs (Figs. 3 and 4) give an accurate idea of the appearance of the stump when the patient was discharged from the hospital. Much more tissue covers the shoulder than was required, and gives the impression that the head of the bone is still in place, but it must be remembered that this was nature's flap, the irregularity of the line of union in front being the original tortuous line of demarcation.

Table of Subclavian Ligations which have occurred at Philadelphia.

No.	Operator.	Date.	Place of ligation.	Disease or injury.	Result.
			CIVIL HOSPITALS.		
1	Gibson,	1828.	3d portion.	Rupture of axillary.	Died.
2	Drayton,	1859.	" "	Rupture of axillary.	Died.
3	Morton,	1866.	2d "	Spontaneous aneurism.	Recovered.
			MILITARY HOSPITALS.		
1	Gross,		3d portion.	Gunshot wounds.	Died.
2	Coolidge,		" "	"	"
3	Hopkinson,		" "	"	"
4	Kennedy,		" "	"	"
5	Morton,		" "	"	"
6	Levis,		" "	"	Recovered.
7	Wells,		" "	"	Died.
8	Not stated,		" "	"	"

ART. VII.—*On Astigmatism, considered in its Relations to Defective Vision, Asthenopia, and Progressive Myopia.* By JOHN GREEN, M.D., of St. Louis, Mo.

IN a former paper (*Am. Journ. Med. Sciences*, January, 1867) I have briefly alluded to the very important disturbing influence of the accommodative act in astigmatism, as shown not only in complicating and masking the visual phenomena, but also in the production of asthenopia, and sometimes even of progressive myopia. I propose, now, to examine the subject somewhat more in detail, with especial reference to the correction of visual defects, and the prevention or treatment of other complications, beginning with the study of

Simple Positive Astigmatism (Am).—In this malformation, which may be considered as a partial myopia, the accommodative faculty is called

into action in near vision only. In viewing distant objects, the eye instinctively abstains from accommodative efforts, which serve only to impair the distinctness of visual perception. A partial closure of the eyelids, however, by effectively converting the aperture of the pupil into a narrow slit, may materially assist in the recognition of distant objects, although at the expense of considerable loss of light. In near vision, any want of distinctness in the retinal image is in part compensated by bringing the object nearer, aided by the natural contraction of the pupil, and perhaps also, as in distant vision, by the partial closure of the lids. If moderate in degree ($\frac{1}{4}$ or less), and occurring in an eye otherwise healthy, this form of astigmatism is rarely attended with much inconvenience, and therefore most frequently escapes detection, or, if detected, demands only such occasional aid as is afforded in distant vision by a concave cylindrical eye-glass. In near vision also, so long as the accommodative power remains good, no especial inconvenience is felt; for any slight indistinctness in the definition of small objects, if not wholly overcome in the manner just mentioned, is still farther diminished and pretty effectually concealed by rapid and unconscious changes of accommodative tension, bringing the different features of the object successively under inspection. Asthenopia, if it occur at all, will only manifest itself in near vision in consequence of these unsteady and oscillatory accommodative efforts, and will generally be insignificant in degree. If the astigmatism exists in a higher degree ($\frac{1}{2}$ to $\frac{1}{1}$), serious asthenopia may be caused by the abnormal strain on the accommodation, especially as there is a strong temptation to hold the book or work even nearer to the eye than in myopia of the same grade. The strong accommodative exertion thus induced, together with the attendant increased efforts at convergence, may lead to muscular asthenopia, or may even prove a powerful exciting cause of myopia. The obvious remedy for these dangers and disabilities consists in the correction of the astigmatism by appropriate concave-cylindrical glasses, bearing always in mind that the higher the grade of the astigmatism the more accurately must the axis of each glass be adapted to the direction of the ocular meridian of least curvature. Such glasses suffice equally for distant and for near vision, so long as the range of accommodation continues tolerably good—that is, until the development, with advancing years, of actual presbyopia.

Attention has lately been called by Donders to the fact that presbyopia consists not only in the progressive limitation of the range of accommodation, but also in a sluggish, and, as it were, reluctant performance of such accommodative adjustment as is still possible. The adjustment, too, when once effected, continues for a little time after the voluntary effort and the convergence of the visual axes have ceased, and it is only after the lapse of some moments that the eye regains its former adjustment for distant

vision. When, therefore, this condition of the accommodative faculty, which precedes by several years the ordinary recognition of presbyopia, has once developed itself, rapid changes of accommodative adjustment from one to the other of the two astigmatic foci become impossible. The consequence is that the eye no longer attempts to vary its adjustment for different features of near objects, but rests content with less perfect, but, at the same time, less fatiguing vision than at an earlier period of life. The eyes seem, therefore, to have become physically stronger, although optically less perfect; in other words, any asthenopia which may have previously existed, gives place to more or less defective vision at all distances. Convex glasses are perhaps now adopted with the advantage of magnifying near objects, but still without securing perfect definition. All objects, in fact, whether near or distant, both when viewed with the naked eye and with convex glasses, appear shaded, doubled, or indistinctly defined in the direction of one or the other of the principal meridians of ocular refraction. This may give rise to little or great inconvenience in reading common print, according as the principal meridians correspond more or less nearly to the horizontal and vertical direction, and so admit of the accurate adjustment of the eye for the vertical limbs of the letters, upon which their easy recognition chiefly depends. The whole visual defect is then thrown into the form of a shading or reduplication of the words in the blank space below the lines; and but little inconvenience is felt, provided only that the lines are sufficiently separated or "leaded"—(a similar shading or reduplication above the lines is, to a great extent, prevented by the natural drooping of the upper eyelid). Great difficulty may be experienced, however, in reading "solid" matter, in which the lines are crowded closely together, and any spherical glass which increases the distinctness of the lines is found to be worse than useless by impairing the distinctness of the letters. In this condition of the eye, very great benefit may often be derived from the employment of cylindrical glasses; and it will frequently be found that concave cylindrical glasses are sufficient even for reading, for it must be remembered that the visual defect has not yet reached the point of absolute presbyopic limitation of the range of accommodation, but consists rather in the loss of power of rapid adjustment.

With the further progress of presbyopia a new phenomenon is observed, viz., the change, in viewing near objects, of the meridian of most distinct vision, dependent on the recession of the farther of the two near points beyond a convenient reading distance. So long as the accommodative power of the eye remains tolerably good, the eye makes strong efforts to adjust itself in near vision for the same meridian as in distant vision. This, in the case now under consideration, is always the meridian of least ocular refraction, and it is only after this adjustment has become impossible,

owing to increasing presbyopic limitation of the range of accommodation, that the eye falls back upon the easier adjustment for the meridian of greatest curvature. This inversion of the meridians of clearest near and distant vision, as shown by the inspection of proper test-diagrams, is very striking and characteristic. Its effect, too, in impairing the usefulness of the eye in reading may be very great, if, as is oftenest the case, the change is from the adjustment for vertical to that for horizontal lines. Under these circumstances there may be such confusion in the letters as to render them quite illegible, although the lines may still appear perfectly distinct. This form of astigmatic presbyopia may come on quite suddenly, especially if from temporary disuse of the eyes—as in sickness—the accommodative power has become enfeebled, and the initial degree of this presbyopia will generally be equal to the whole degree of the astigmatism. Such a case of presbyopia, although perhaps quite sudden in its access, may, however, continue for a long time without sensible increase, for the eye has now a new store of accommodative power in reserve equal in amount to the full degree of the astigmatism. The treatment of this form of presbyopia should be begun by the use of convex cylindrical glasses carefully adjusted to correct the whole degree of the astigmatism; if concave cylindrical glasses have been previously worn, they may be changed for the corresponding convex glasses with the direction of the axes reversed. Should, however, the degree of the astigmatism be very high, the transition from concave to convex cylindrical glasses, or the adoption of the latter in the early treatment of the presbyopia, may involve the production of an unnecessary and inconvenient degree of artificial myopia. In such a case a special glass may be ordered, in which this tendency is overcome either by the combination of a convex and a concave cylindrical surface with their axes turned to a right angle to each other, or, as is more generally advised, by combining a convex cylindrical surface adjusted to correct the astigmatism with a concave spherical surface adapted to correct the excessive artificial myopia. Whenever in the progress of the presbyopia it comes to exceed the degree of the astigmatism, the simple cylindrical glass ceases to afford the requisite correction; it then becomes necessary to reinforce it by the addition of a convex spherical surface of suitable focus. The same result may be attained also by combining two convex cylindrical surfaces, of different radii, with crossed axes.

Simple positive astigmatism is very frequently mistaken for ordinary myopia, and treated by common concave glasses. This is, I believe, a frequent and important source of danger to the eye. A person labouring under this form of astigmatism discovers that his general perception of distant objects is inferior to that of his friends, and is led to make trial of concave spectacles. The effect of these glasses, if not too strong, is to change the region of accommodation so that the eye when at rest is now adjusted in distant vision for the meridian in which it was before myopic,

while by a certain accommodative effort the adjustment can be readily changed to the other meridian. The total perceptive power of the eye may thus be very sensibly increased, but at the cost of incessantly varying accommodative efforts. The result is, frequently, such a degree of asthenopia as to lead to the speedy rejection of the glasses; but, unfortunately, this admonition is not always heeded, and so more serious complications may arise. One of the first results of the adoption of concave spectacles in this form of astigmatism is the neglect of the habit of complete accommodative relaxation in distant vision, as is shown by the eye soon relapsing into the habit of accommodating for its meridian of least refraction, so that the glasses seem to have lost their original efficacy; meanwhile it is discovered that without the glasses distant vision has become less distinct than it was before their adoption, and that their use has given rise to an apparent myopia. Thus far no great harm has been done; and if the glasses are now abandoned, the eye gradually returns to its original condition. It too often happens, however, that the apparent myopia thus induced is interpreted as an indication for stronger glasses; these, in turn, are soon outgrown, and are exchanged for still stronger, until actual and perhaps rapidly progressive myopia is developed. This tendency to the production of myopia is increased by the fact that the apparent size of objects is diminished by the concave glasses, and so the necessity for holding the book near the eye in reading becomes greater than before. This, in turn, calls for increased efforts of accommodation to overcome the effect of the concave glasses, and of convergence to reinforce the overtaxed accommodation.

When, with advancing years, the disability of presbyopia has been superadded to that of astigmatism, it is often possible, by a few trials with common convex spectacles, to find a pair which suffices tolerably for reading, by so correcting one eye or both as to throw the whole visual defect into the form of a shading or reduplication of the words in the spaces between the lines. This amounts, in fact, to the restoration of about the same reading power as the person has been accustomed to, and is therefore generally accepted as a satisfactory result. With such imperfect correction, however, the resultant acuteness of vision may still be far below the normal standard; this may lead to the habit of using very strong glasses, in order to increase the apparent diameter of small objects by bringing them very near to the eye. This calls, of course, for excessive convergence of the visual axes, and may lead either to muscular asthenopia or to the abandonment of the habit of binocular vision. The obvious remedy for these disadvantages is in the adoption of convex cylindrical or spherico-cylindrical glasses.

In the foregoing remarks but little notice has been taken of variations in the direction of the meridians of greatest and least refraction. It may be readily conceived, however, that the direction of these meridians, with

reference to the dominant lines of surrounding objects, must very greatly affect the usefulness of the eyes for particular kinds of work. How this is shown in reading has been already noticed. In the common walks of life, also, both within doors and out of doors, the great majority of the regular objects of which the eye takes especial cognizance are defined by vertical and horizontal lines. Such are the architectural and structural lines of buildings, the lines of the letters upon sign-boards and placards, the line of the distant horizon, the trunks of trees, &c. If now, in a case of positive astigmatism, the principal meridians of the eye correspond pretty nearly in direction to the horizontal and vertical, lines lying in one or the other of these planes will appear clearly defined, while those lying in all other planes, and especially in the opposite plane, will be more or less indistinct. Such a correspondence of the principal meridians of the eye with the dominant lines of surrounding objects is, however, by no means constant; in fact, it may be considered the exception rather than the rule. In investigating any considerable number of cases with reference to the direction of the principal meridians in the two eyes, it will be found that they fall naturally into two distinct classes, viz., the symmetrical and the unsymmetrical. Of the symmetrical cases many will be found in which the corresponding meridians vary but little from the vertical, in which case the two retinal images will be nearly identical, and the two eyes will work well together and give substantially the same visual result as either eye singly. If, on the contrary, the combined deviation in the two eyes is equal to ninety degrees, both vertieal and horizontal lines will appear indistinct; but oblique lines lying in the two planes midway between the vertical and horizontal will be pretty clearly defined, and by covering first one eye and then the other, it will be evident that this is the result of the combined impression, upon the sensorium, of two dissimilar retinal images. So, too, if with the direction of the principal meridians absolutely identical in the two eyes, there happens to be also a refractive difference equal or about equal in degree to the astigmatism, it will be found that with any given degree of accommodative effort the two eyes will be adjusted at equal distances for the two opposite meridians, which will be oftenest the vertical and horizontal, and so the astigmatism may wholly escape detection by the ordinary tests of horizontal and vertical lines. Of the unsymmetrical cases a certain number present a nearly equal deviation in the same direction, and so admit of identical images in the two eyes, but with the plane of most distinct vision inclined to the vertical. This may lead to a habit of bending the neck to one side or the other in looking at vertical or horizontal lines, or of giving to the book or paper an oblique position in reading or writing. With unequal deviation in the two eyes there will be two planes of most distinct vision intersecting each other at an angle equal to the sum or to the difference of inclination.

When the retinal images in the two eyes are materially different, the

visual phenomena may be variously modified. Objects with strongly dominant lines, corresponding in direction to the two meridians of most distinct perception, have often a peculiar glittering appearance, owing to the mind taking especial cognizance first of one retinal image and then of the other in rapid alternation. Other objects, with outlines less conspicuously marked, may present no details of sufficient prominence to fix the attention, and so appear generally indistinct. When one eye is astigmatic while the other is of normal visual acuteness, the distorted astigmatic image becomes a source of confusion; it may, therefore, come to be wholly neglected in ordinary vision, or, if the astigmatism is of a low grade, it may prove to be only an occasional inconvenience, and is then, perhaps, temporarily excluded by the closure of the eye.

Positive Astigmatism with Myopia (M+Am).—The cōexistence of astigmatism with myopia is much more frequent than has been generally supposed; in fact, in cases of decided myopia the absence of astigmatism appears to be the exception rather than the rule. The astigmatism, even when considerable in degree, is in unaided vision so masked as generally to escape detection, while the improved perception of distant objects with concave glasses often leads to the hasty conclusion that there can be no remaining defect worth investigating. Concave glasses when used are almost always chosen of excessive strength, so as to convert the case into one of negative astigmatism (Ah) or even of negative astigmatism with hypermetropia (H+Ah). This artificial change in the region of accommodation enables the eye to adapt itself to the reception of parallel rays lying in the plane of either of its principal meridians, and so the characteristic phenomena of astigmatic vision are hidden in a mass of seemingly contradictory observations. The improved visual power at a distance acts as a perpetual incentive to accommodative efforts, which are attended at first with more or less of asthenopia, but which, later in life, are performed sluggishly and with difficulty; this gives rise to a comparative slowness of perception, which, in time, gradually increases, until, with advancing years, accommodative adjustments are finally abandoned, and the eye finds rest in amblyopic vision.

In near vision, and especially in reading, the astigmatic eye is compelled to distinguish objects whose size has generally been fixed with reference to the powers of normal eyes. It follows, therefore, that, in astigmatism as in hypermetropia, the eye attempts to make up for the indistinctness of small objects by bringing them nearer the eye and thus enlarging their retinal images. This calls for increased efforts at accommodation and convergence, with their attendant disabilities and dangers. These are: 1st. Muscular asthenopia and insufficiency of the internal recti muscles as the result of the excessive convergence; 2dly. Ordinary asthenopia from the strong accommodative efforts provoked by the attempt to read at too short distances; 3dly. The form of asthenopia which occurs also in distant

vision with concave glasses, and which here depends upon continually changing accommodative efforts called forth by the necessity for more distinct perception of a doubtful letter or figure; and 4thly, as the direct consequence of the excessive and long continued strain, myopia from posterior distension of the eyeball. When myopia is superadded to astigmatism the temptation to hold the book very near the eye is much stronger than in simple astigmatism, while the dangers which attend the habit remain undiminished and thus the myopia may become progressive.

The progressive tendency of the myopia, although it often goes on to a most alarming extent, is yet restrained by some opposing agencies. Thus the muscular asthenopia may compel the sufferer to desist from pursuits for which his eyes are unsuited; or this may give place to insufficiency of the internal recti muscles which may terminate in intermittent or permanent external strabismus, and so the efforts at convergence having become unavailing, cease to be made. Or the increasing myopia may finally lead to the use of concave glasses so strong that the astigmatism may be accidentally corrected in one eye or both by giving a peculiar twist to the spectacle frame or by looking obliquely through the glasses. The asthenopia which is felt in viewing distant objects through strong concave glasses gradually gives way, too, with advancing years, owing to the more sluggish manner in which the accommodative act is performed by the harder crystalline, rendering it impossible successively to accommodate for the different meridians without too great expenditure of time.

The treatment of positive astigmatism combined with myopia must be first and chiefly by concave cylindrical glasses, which must be carefully adapted to correct the exact degree of astigmatism in both eyes. If the degree of myopia remaining is still such as to make it necessary in reading to hold the book too near the face, a concave spherical surface must be added; but it is not well to be hasty in deciding upon the necessity for this additional aid, for it often happens that, from previous abuse of concave glasses, the eye has in part lost the habit of accommodative relaxation, and requires time for its recovery. For distant vision it is necessary to measure and correct the total refractive anomaly, bearing always in mind that, from the cause just mentioned, the degree of the myopia may appear to be greater than it really is. If simple cylindrical glasses suffice for reading and for near vision, it may be well to prescribe for distant sight an ordinary concave eye-glass to be used in connection with the cylindrical spectacles. Above all must we beware of the dangers which attend the use of common concave glasses. The mischief they may do in rendering distant vision fatiguing and painful has been already noticed, while in reading they can obviously be of no use, for the habit of holding the book near to the eyes depends, not upon extreme myopic change in the position of the far point of distinct vision, but upon the effort to compensate for the indistinctness of the retinal images by increasing their size.

The important practical lesson to be drawn from these considerations is that *myopia is a complex and important disease* whose successful treatment demands an accurate knowledge of the physiology of vision as well as the exercise of much patience and the employment of improved methods of examination.

The treatment of myopia with astigmatism in the later years of life, after the development of full presbyopic limitation of the range of accommodation, must depend entirely upon the position of the far and near points of distinct vision. For distant vision substantially the same glasses will be needed as at an earlier period, while for reading, choice must be made between concave and convex cylindrical glasses, either simple or combined with convex or concave spherical surfaces. In general, such glasses should be selected for reading as completely correct the astigmatism, and, at the same time, leave the near point as close to the eye as is consistent with easy convergence of the visual axes.

Simple Negative Astigmatism (Ah).—In this form of astigmatism it is within the power of the eye, by changes of adjustment, to bring to a focus parallel rays, lying in the plane of either of its principal meridians. Hence it is seldom the case that in distant vision any great difference is perceived in the distinctness of lines situated in different planes, for the eye forms the habit of unconsciously varying its adjustment to suit the direction of the particular lines to which its attention is directed. Tested by Snellen's types, the acuteness of vision may seem to be nearly or quite normal, but it will always be found that in looking at objects of more complex design, the finer details appear confused. So also in near vision, it will be found that large and well-printed letters are clearly recognized, but that the smaller types, especially in badly printed books, can only be distinguished by bringing them rather near to the eye. Hence may arise, in distant vision, asthenopia from the necessity for constantly varying accommodative adjustments, and, in near vision, muscular asthenopia with perhaps insufficiency of the internal recti muscles or even divergent strabismus, all dependent on the excessive efforts at convergence of the visual axes. Myopia is not generally to be feared, for the very fact of the eye remaining hypermetropic, or negatively astigmatic, in the presence of powerful exciting causes, is evidence of the absence of predisposition to that disease. The disabilities which attend negative astigmatism are therefore of the nature of asthenopia, with more or less defective vision. As accommodative adjustments become sluggish with advancing years, the asthenopia in distant vision gives place to less perfect visual perception. Presbyopia, too, is developed by as much earlier than usual, as the refractive power of the eye is originally weaker in its meridian of least curvature. The comparative difficulty of distinguishing small type leads to the early adoption of convex glasses, and generally to the selection of a

strong pair, in order to secure the advantage of large retinal images, by allowing the book to be held near to the eye.

The habit of holding the book near the eyes in reading sometimes leads to an erroneous diagnosis of myopia, and the adoption of concave glasses. These, of course, are of no real advantage, yet it is sometimes the case that they are worn under the impression that they are the proper thing, and that somehow they must be of service.

The treatment of negative astigmatism is by convex cylindrical glasses. These serve equally for distant and near vision so long as the eye retains a sufficient accommodative range. With the development of presbyopia arises the necessity for additional aid in reading, which may be given either by special glasses, ground with a cylindrical curve on one side and a spherical curve on the other, or by a convex eye-glass used in front of the cylindrical spectacles.

To detect and measure negative astigmatism, or negative astigmatism with hypermetropia, they must first be converted into positive astigmatism by placing an appropriate convex lens before the eye.

Negative Astigmatism with Hypermetropia (H+Ah).—The symptoms of negative astigmatism with hypermetropia, as of simple negative astigmatism, take chiefly the form of asthenopia, the visual defect being more or less completely masked by accommodative efforts. In reading there is the same degree of indistinctness of the retinal images as in simple astigmatism, but it often happens that the degree of hypermetropia is such as to neutralize any advantage from bringing the book nearer to the eye, and so the case is less likely to be mistaken for myopia. The asthenopia, too, is of the kind dependent on excessive or changing accommodative efforts, and strabismus, if it occurs, is likely to be of the convergent variety. Myopia, if it could be artificially induced, would be, to a certain extent, curative, but, unfortunately perhaps, the predisposition is wanting. Presbyopic vision may be developed very early in life, and in exceptional cases may even exist from the beginning.

Persons with negative astigmatism and negative astigmatism with hypermetropia apply for aid on account either of asthenopia or defective vision. The asthenopic symptoms seem frequently to be explained by the discovery of a certain degree of hypermetropia, but the correction of the hypermetropia by common convex glasses often fails to afford the full measure of relief expected. Much benefit may, however, follow their use from the conversion of the negative astigmatism or negative astigmatism with hypermetropia into positive astigmatism, in which case accommodative efforts cease to be useful in improving distant vision and are therefore soon abandoned. The relief is however but imperfect even in distant vision, for the disadvantage of ill-defined retinal images still remains in part or wholly, while in reading it may happen that the correction of the hypermetropia takes away the former safeguard against holding the book too

near the eyes and so opens the way for the development of muscular asthenopia.

The treatment of negative astigmatism with hypermetropia should, I think, consist, 1st, in the correction of the astigmatism by convex cylindrical glasses; and 2dly, in the correction of the remaining hypermetropia if of a sufficiently high grade to make it worth the while to treat it. The principles which must regulate the treatment of presbyopia, when it appears, have been already sufficiently explained.

Mixed Astigmatism (Ahm or Amh).—In this form of astigmatism, in which the eye is myopic in one meridian and hypermetropic in the other, it will often suffice to prescribe a concave cylindrical glass equal in power to the full measure of the astigmatism, so as to convert the case into one of simple hypermetropia. Later in life, when presbyopia has appeared, this glass must be exchanged in near vision for the corresponding convex cylindrical glass, reinforced if necessary by an appropriate spherical surface. Should the degree of astigmatism be very great, the use of simple concave or convex cylindrical glasses may involve the production of an inconveniently high grade of hypermetropia or myopia, in which case an appropriate spherical surface may be added. In measuring mixed astigmatism it is necessary to eliminate accommodative interference by the use of a convex lens.

In certain cases of asthenopia occurring in connection with astigmatism, and chiefly as I believe in that form of asthenopia which I have described as dependent on the state of accommodative unrest incident to incessant changes of accommodative tension, the eye sometimes manifests such a degree of irritability as to induce almost spasmodic efforts at accommodation whenever the visual act is attempted. In such cases it may be necessary temporarily to paralyze the accommodative organs by atropia before attempting to measure the state of the refraction, and even after fitting the eyes with the most accurately adjusted glasses the spasmodic efforts at accommodation may persist to such a degree as seemingly to render the optical corrective fruitless. The special indication for treatment in this state of things is clearly to maintain, by the continued use of atropia, such a degree of accommodative paralysis as shall suffice to restrain all accommodative efforts until such time as the long continued disuse shall have overcome the tendency to spasm, supplying, of course, the temporary loss of accommodative power by such a pair of convex glasses as shall admit of the convenient use of the eyes in reading. Such a course has been pursued with striking success by Donders in several cases of obstinate asthenopia, in which, however, the existence of astigmatism is not mentioned. (See Donders, *On the Anomalies of Accommodation and Refraction of the Eye.* New Sydenham Society, London, 1864, pp. 625 and 626, also p. 289.)

In conclusion, the influence of astigmatism as a disturbing element in

vision, and secondarily, as an exciting cause of disability or disease, may be thus briefly summed up:—

(*a.*) *Impaired visual acuteness* which (except in Am and M+Am, in distant vision) is masked, and to a certain extent overcome, by rapidly varying accommodative adjustments; the extraordinary exertions thus induced may be attended with unusual fatigue, and so give rise to a form of asthenopia which may be designated as

(*b.*) *Asthenopia from accommodative unrest.*—The impaired visual acuteness may lead in near vision to the habit of bringing small objects very near to the eyes in order to increase the size of their retinal images; hence a call for increased accommodative tension which (except in high grades of M with Am), may give rise to

(*c.*) *Asthenopia from excessive accommodative tension;* or, instead of asthenopia, the excessive accommodative tension, aided by increased convergent efforts may lead, in cases of H+Ah to the gradual development of

(*d.*) *Convergent strabismus.*—The excessive convergence of the visual axes necessitated by the habit of holding small objects very near to the eyes (especially in Am+M+Am), may lead to fatigue of the internal recti muscles or

(*e.*) *Muscular asthenopia;* which, by a continuance of the same habit, may take the form of

(*f.*) *Insufficiency of the internal recti muscles,* or even become developed into

(*g.*) *Divergent strabismus.*—Finally, the increased tension of the eyeball consequent upon these excessive efforts of accommodation and convergence must tend, in the presence of a certain myopic predisposition, both to excite and to aggravate

(*h.*) *Progressive myopia.*

These various disabilities may, for the most part, be overcome by the intelligent employment of cylindrical or spherico-cylindrical glasses. In certain cases of asthenopia (*b* and *c*) it may be necessary for a time to restrain unconscious accommodative efforts by the judicious use of atropia, or to train the accommodative organs by carefully regulated exercise. In cases of strabismus and of insufficiency of the internal recti muscles (*d*, *f*, and *g*) and sometimes also in muscular asthenopia (*e*) tenotomy may be indicated. In other cases of muscular asthenopia, by the employment of prismatic glasses with surfaces ground to appropriate cylindrical or spherical and cylindrical curves, we may be able to dispense with the surgical operation, and, by gradually exchanging the prisms for others of less deviation, we may succeed in training the internal recti muscles by exercise until the aid of the prisms may be altogether dispensed with. It would seem, also, that prisms must sometimes prove most valuable auxiliaries in combating the progressive tendency in myopia, especially where the acuteness of vision is some-

what less than normal, and where the temptation is consequently strong to hold the book very near to the eyes.

One additional point in the treatment of astigmatism by glasses demands a brief notice; that is, the equalization, as far as it is possible, of the two eyes. In the higher grades of astigmatism, although by the use of cylindrical or spherico-cylindrical glasses we may wholly correct the ametropia in every meridian, there still remains the great defect of distorted retinal images. Thus, a circle appears as an ellipse, etc. If the degree of the astigmatism and the direction of the principal meridians happen pretty nearly to coincide in the two eyes, this distortion is of little importance, and soon comes to be correctly estimated by the judgment. If, however, the astigmatism is confined to one eye, or if the direction of the principal meridians differs much in the two eyes, it is then impossible to provide for equal vision except by combinations of cylindrical glasses analogous to the Galilean telescope, which is obviously impracticable in ordinary cases. When, however, there is but slight irregularity in the two eyes, very great advantage may attend the exact correction of each, so as to admit of accurate binocular vision. This is effected by testing the two eyes at the same time by means of trial spectacles which have been previously fitted to each eye singly. By this test it will often be found that, owing to the disturbing influence of unconscious accommodative acts, the glasses thus selected, although seemingly well adapted to each eye singly, do not answer so well when used together. By covering rapidly first one eye and then the other, while both are directed towards a fixed object, it will be found that the adjustment of one is better than that of the other, and that the binocular result may be much improved by a slight change in the power of one or the other of the glasses, or possibly of both. When once the two eyes have been thus equalized, the existence of any remaining ametropia may be tested by the addition of a trial eye-glass containing a pair of very weak convex or concave glasses, and so the exact combination best adapted for binocular vision may be determined.

Proceeding in this way, it often happens that the rather complex combinations thus selected may be reduced to a simple cylindrical lens by neglecting insignificant quantities. This, when practicable, is a great advantage, for it enables us to prescribe at once a cylindrical glass which can be furnished by the optician from his stock, whereas the selection of a spherico-cylindric glass involves the necessary delay and expense attending the manufacture of a special glass for each case. Frequently, too, we may select simple cylindrical glasses either for reading or for distant vision, and give a common eye-glass, either concave or convex, to be used in connection with the spectacles in distant vision or in reading.

ST. LOUIS, January, 1867.

ART. VIII.—*Bromide of Potash in Acute and Chronic Affections of the Testis.* By BEDFORD BROWN, M. D., Washington, D. C.

THE action of bromine as a therapeutic agent appears to partake both of a general and local, or rather of a specific character. The known general influence which it exercises over certain organic operations of the system is mainly due to a peculiar power of sustaining the process of general nutrition in a healthy state, and of correcting many abnormal deviations from that process.

In addition to these more general alterative properties, bromine possesses remarkable sedative powers over the nervous system, without many of those serious effects resulting from more powerful narcotics. This gives it additional value in the treatment of the diseases of organs having such varied and extensive nervous communications as the testis.

An experience in its use of nearly ten years convinces us that, in addition to these properties, it has a very decided specific effect in diseases of the entire genito-urinary system. Furthermore, this local *specific* power partakes both of an alterative and sedative character. It is designed here to convey the impression that this sedative power is not confined simply to the nervous structures of this system, but is applicable to the special functions of the organs themselves, particularly the generative.

That unavoidable stimulus arising from the specific function of an organ, even when not actively exercised, the peculiar erethism given to the circulation and innervation of the parts in disease, must ever constitute a serious difficulty in the way of treatment. The exercise of the function of vision in affections of the eye, and of digestion in diseases of the stomach, afford difficulties familiar to all. So in affections of the female uterus and the male testis, the generative functions, and peculiar erethism associated with them, present serious obstacles. Hence the presence and exercise of specific function must always constitute an important element in the causation and perpetuation of the diseases of the particular organ to which they belong.

To be able to quiet the injurious excitement peculiar to the generative organs by agents which leave no permanent impression, until morbid action passes away, is a matter of no insignificant moment. Indeed the influence exerted by the excitement of peculiar function may be said to give much of that complicated character and intractability to the diseases of the generative system. Bromine appears to possess this peculiar property in an eminent degree.

The action of bromine in ovarian affections displays these triple properties (alterative, sedative, and local specific powers) in a striking degree. In a case of singular form of hysteria, in a young female of exuberant health otherwise, and in the early periods of puberty, which was clearly attributable to engorgement and subacute inflammation of the ovary, the

bromide of potash given freely not only relieved the local ovarian and uterine symptoms, but gave permanent relief to the annoying hysteria.

In affections of the testis, indeed of the generative organs generally, there is established a remarkable but distressing association of nervous sympathy, not only between themselves and their varied relationships, but with the entire spinal marrow and brain. The prompt action of bromine on the two great nervous centres, the brain and the spinal marrow, accounts in some measure for the sedative influence exerted by the agent on these distressing sympathetic symptoms arising during disease of the generative organs. Hence the influence of bromine as a sedative is not confined to the testis, ovary, or uterus, but appears to diffuse itself over a considerable range of kindred organs of the pelvis which are supplied by nervous and vascular elements from a common source. Here may be observed a striking instance of its action on a class of organs having strong and close nervous sympathies, though differing materially in function. Affections of the spinal cord, and of the genito-urinary organs, have long been known to occupy peculiarly intimate relationships, and as having strong *reactive* influences in disease. The conjoint influence exerted by bromine on the important system of genito-urinary organs, and their peculiar sympathies alluded to, includes its power over the male and female bladder, the prostate gland, the urethra in a state of functional or organic disease, so that in all of such affections it becomes a valuable remedy. In urethral strictures attended with undue irritation, inflammation of the bladder and its neck, enlargement of the prostate gland, these peculiar properties are manifest; and when success is not complete, much relief is afforded. Much of this specific influence is attributable to its sedative action on the lower portions of the spinal cord. All practical physicians appreciate that extensive chain of nervous sympathies and associated phenomena pervading this class of organs, in both male and female, when one or more of their kindred are diseased. Now, under these circumstances, bromine exerts a prompt influence, through the medium of the spinal cord, on all these sympathetic phenomena.

These preliminary remarks are necessary to a proper appreciation of those which are to follow on the treatment of affections of the testicle by means of bromine and its preparations.

The sedative action of bromine is rather of a *harmonizing* character, never exciting inordinately one organ, or set of organs, while depressing the tone of others, or correcting the functional delinquencies of one at the expense of another; maintaining rather a universal system of organic co-operation essential to healthy action.

Some years since, after a favourable experience with the use of bromine in some kindred affections, we determined to test the powers of the remedy in organic affections of the testis. It was very fairly tested in the three principal forms of organic disease of these organs, viz., acute inflammation, chronic enlargement, and that class presenting scirrhous characters. The

following cases comprise a succinct statement of the treatment and results of these three forms of affection.

CASE 1.—A man, aged fifty, originally of robust health, but more recently presenting symptoms of functional affection of the kidneys. After a rather severe acute inflammation of both testicles, of two weeks' duration, purulent matter accumulated extensively in the vaginal sac of one side, and finally made its escape by ulceration. Subsequent to this, the case assumed a very serious form, presenting positive indications of scirrhous degeneration of both testicles. Both organs, while considerably increased in volume, were disproportionately increased in weight. They were so thoroughly nodulated and indurated as to impart the sensation to the touch of stony hardness. The epididymis of each testicle participating in the morbid process, imparted the sensation, through the scrotum, of distinct, bony formations. The pain experienced was not constant, but of a lancinating character, and, when present, of a distressing nature. The general health indicated a decided tendency to sympathize, and assume a cachectic type. Hitherto the case had been uncontrolled by all methods of treatment.

The patient now commenced the use of the bromide of potassium in doses of x grs. three times daily, subsequently increased to ℈j, as an experiment under desperate circumstances, from which something favourable might be hoped. After the tenth day there were encouraging indications to persevere. At the fourth week of administration the signs of improvement were positive. From this time, during the four months which the patient continued to use the bromine, the improvement was progressive, until every vestige of disease had disappeared. There was a gradual reduction of volume and weight, diminution of pain, and absorption of indurated exudation.

CASE 2.—A man, aged forty years, had been suffering for more than twelve months with enormously enlarged testis, attended with much distressing pain in the organ, spermatic cord, and lumbar region. Patient commenced the use of the bromide of potassium in ℈ doses, three times a day, and continued the remedy for five months. During the treatment the diseased organ lost more than two-thirds of its volume, but did not entirely regain its original size; but the pain and inconvenience having so far subsided, the patient concluded to discontinue the treatment. The patient informed me also that, during this time, upon any accidental suspension of the remedy, a return of the pain and uneasiness was sure to enforce a resumption.

CASE 3.—A young man had a violent attack of orchitis, following gonorrhœa of two weeks' standing, from which he had suffered much pain and annoyance, depriving him of rest both day and night. After the operation of a brisk cathartic, he took ʒss of bromide of potash three times daily, in connection with hot water applications to the diseased organ, applied profusely and repeatedly. The earliest effect of the remedy observed was the positive diminution of pain, and much relief to those annoying sympathetic phenomena attending. This peculiar feature of the action of bromine in the most of cases has attracted my attention so positively as to cause me to distinguish it by the term *brominism*. This is the saturation of the system with the agent to a point when the pain of inflammation is relieved, and nervous irritation and restlessness quieted. The patient continued the treatment for a period of two weeks, when he was completely relieved.

I wish to refer here to the influence of bromine on those distressing sensations of *weight* and *dragging* of spermatic cord, pain and uneasiness in the lumbar and sacral regions, associated with enlarged testicle. These peculiar symptoms, separate from mere mechanical causes or influences, must be very much due to the reflex functions of the cord. Both the afferent and efferent nerves of these organs must have a common point or centre for *insertion* and *origin*.

The prompt action of bromine on the spinal cord, and on the various nerves arising from the lower portion of the cord, and abundantly distributed to the genito-urinary organs, accounts for much of its value in the treatment of the diseases of that associated system, apart from any mere alterative powers. There is much reason for believing that the influence exerted over the peculiar nervous phenomena of these organs is due to a primary action of the agent on the great nervous centres alone, particularly on that of the spinal cord. The action of bromine, indeed, on these latter structures, and its reflection thence on the functions of important organs, furnishes suggestions of peculiar interest.

ART IX. *Remarks on the Operation of J. Marion Sims for Dysmenorrhœa, depending on Anteflexion of Uterus.* By J. C. NOTT, M. D., Baltimore.

BUT a few years ago the words Dysmenorrhœa, Amenorrhœa, Leucorrhœa, Polypi, Ulceration of Os Uteri, et id omne genus, called up in my tortured brain a hideous uterine hydra, that I had been fighting unsuccessfully, with all the odds against me, and so unsatisfactory were my efforts that I actually turned away with disgust from this class of maladies, and threw them off upon professional colleagues. The physiology of the uterus was little known, its pathology less, and least of all did we understand the diagnosis of its endless maladies.

But, thanks to the teachings of Dr. Simpson, of Edinburgh, and our countryman Dr. J. Marion Sims, a better day is dawning; an immense stride has been made in positive knowledge, and although we have yet much to learn in this department, it must be confessed, that it really begins to assume the aspect of a science instead of blind empiricism; many of these diseases, before obscure, are now easily diagnosed and treated, on fixed rational principles. The uterine sound, bi-manual palpation, Sims' speculum, sponge tents, improved position of the patient, &c., now enable us to diagnose with accuracy many important diseases that previously were merely guessed at and treated by the most vague empiricism.

As already remarked, we have yet much to learn in uterine surgery and therapeutics. All reformers, whether in politics, religion, or medicine, are prone to run into extremes, and while on the one hand they often fail to follow truth onwards in a direct line, they on the other leave behind

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errors to be corrected by other sober minds that follow them. Bennet ran wild on diseases of the *os and cervix uteri*, and committed excesses with his caustics. West, the representative of another school, takes the opposite extreme and attaches comparatively little importance to these affections. Then come Simpson and Sims with the knife and sound in hand, and tell us that many of the maladies heretofore treated by caustics, washes, leeches, drugs, &c. are not to be treated without the knife. Now they are probably all wrong and all right; more light is wanted, and the *juste milieu* is yet to be sought.

I confess that I come back, after reading the works of Simpson and Sims, to uterine surgery and therapeutics, with feelings very different from those which induced me to abandon this practice a few years ago. I now feel competent to diagnose and treat many cases which were formerly beyond my reach, and shall be much gratified if I can aid in calling the attention of others to the points at issue.

The first case to which I ask attention is the type of a large and troublesome class, and one which has interested me greatly.

CASE I. *Anteflexion of uterus; elongated, conical neck, and contracted os; dysmenorrhœa; relieved by amputation and incision of neck.*—Mrs. —— came from the country to consult me on 10th Dec. 1866; aged 23; been married ten months; commenced menstruating at twelve years; had no difficulty for two or three years, after which dysmenorrhœa commenced and has continued without intermission ever since, causing violent suffering for the first one or two days, and sometimes more, of each period; menstruation usually lasted five or six days, and the discharge was more profuse than natural; complexion good; general health pretty good: nervous system much deranged at the monthly periods.

Fig. 1.

On examination, the uterus was found low in the vagina and greatly anteflexed; the fundus was readily touched by the finger, behind the sym-

physis, and by passing the finger onwards in the vagina the os was easily reached, the neck being curved downwards and forwards. Fig. 1 gives a sufficiently accurate idea of the form, size, and position of the organ. The neck was small, conical and projected about an inch below the reflexion of the vagina in front and a little more behind. The os was round and small; a sound, very much curved, was with difficulty introduced a little more than two inches; the whole organ was under size. Although married about ten months had never conceived, and there was every reason to believe that both dysmenorrhœa and sterility were results of the anteflexion, elongated conical neck, and contracted os.

By a little manipulating with one finger in the vagina and the opposite hand on the abdomen, it was easy to work the fundus up into its normal position. As the fundus went up the long curved neck swept down in the opposite direction, as the movements of one end of a little crooked cucumber would be governed by those of the other end. The os uteri by this movement was brought within an inch and a half to two inches of the vulva.

Having satisfied myself fully as to the nature of the case, and the applicability of the principles laid down by Dr. Sims, I, on the 17th Dec., 1866, with the assistance of my friends, Drs. F. E. Gordon and J. T. Gilmore, proceeded as follows:—

The patient was placed in Sims' "semi-prone position," and fully chloroformed; the vagina being then fully exposed by Sims' speculum, a tenaculum was hooked into the anterior lip of the os, which, with a very little force, was drawn down to a convenient point for operation, Fig 2.

Fig. 2.

With a pair of strong straight scissors, the neck was then divided on either side, through its entire thickness, from half to three-quarters of an

inch, as seen in Fig. 2, dotted line *a*, according to Sims' "bi-lateral" method. While held in this position with the tenaculum by an assistant, as seen in Fig. 3, the *posterior* lip was seized with another tenaculum and removed at a blow with a pair of curved scissors, as seen in Fig. 3. Next, in accordance with the rule of Dr. Sims, I introduced a blunt pointed tenotomy knife into the cervical canal, and carrying it up to the *os internum*, made an incision *backwards*, as seen in Fig. 3, dotted line *c*, superficial at the *os internum*, but extending through the entire thickness, as the incision reached the truncated margin. This last cut straightened the canal, gave an easy entrance into the cavity of the body of the uterus, and a sponge tent was introduced, as seen in Fig. 4, to be left *in situ* with the view of preventing healing by the first intention and consequent closure of internal os—see sponge tent *d* extending up into cavity.

Fig. 3.

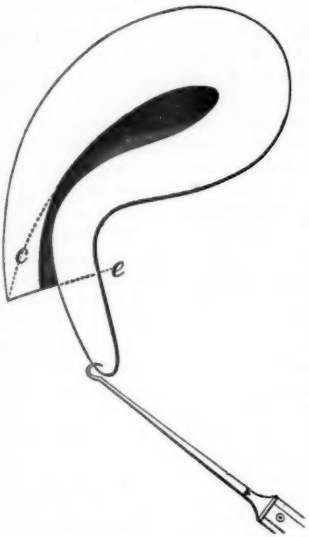


Fig. 4.

The operation was then completed by removing the anterior lip with the curved scissors, as seen in Fig. 3, at dotted line *e*. Fig. 4 represents the operation after it is completed: the neck amputated, the internal posterior cut made, and the sponge introduced.

A glance at Fig. 2 shows the great advantage of the small tenaculum hooked into the *anterior lip;* the traction on the anterior lip not only brings down the os, but, to a great extent, *corrects the abnormal flexion* of the organ, thus facilitating greatly the *internal* incision of the cervix and the introduction of the sponge tent.

By comparing my operation with the plan laid down in such cases by Dr. Sims, it will be seen that I have deviated in two important particulars —1st. I amputated the *posterior* lip first, instead of the anterior. 2d. I introduced the sponge tent *immediately*, while Dr. Sims usually allows several weeks to pass before using the tent.

Now a glance at Fig. 3 shows that if the *anterior* lip had been first removed, and the traction made with the hook on the posterior instead of

the anterior lip, the opening into the cervix would have been *closed*, and the introduction of the tent made difficult, if not impossible. By keeping a firm pull on the anterior lip, after the posterior one is amputated, as in Fig. 3, the channel is pulled open and the tent slips in with the greatest facility. The internal cut backwards is also rendered very easy by the traction on the anterior flap.

Dr. Sims does not introduce a tent *at the time of this operation*, and tells us that one of the objections to his operation, and difficulties to be contended against, is the tendency of the cervical canal to contract again in spite of his internal incision. To overcome this contraction he tells us that a second operation is usually necessary by incision and tents; so great, in fact, is the tendency to contract that not unfrequently the cutting and tents have to be repeated several times.

Fig. 4 represents the uterus after the amputation of the neck is completed, the internal incision made, and the tent introduced.

All the above steps of the operation were easily and quickly accomplished, but I must now call attention to an oversight, for which I deserve censure. When, after the bi-lateral incisions were made, the posterior flap was cut off, an artery was seen spirting from the truncated surface. I might then (as the uterus was firmly held by the tenaculum in a very convenient position) have easily ligatured the vessel; but never, in any amputation of the cervix uteri, having had troublesome hemorrhage, I did not, with the *liquor persulphas ferri* at hand, anticipate it here. Without waiting for the arrest of hemorrhage, I cut off the anterior flap at once and depended on the tampon. A wad of cotton, saturated with one part of the iron to three of water, was thrust down to the bottom of the vagina and dry cotton packed in on this to hold it in place. In spite of all this hemorrhage continued to such an extent that I thought it prudent, at the end of an hour, to remove all the dressings and coagula; a bivalve speculum was introduced; the vagina thoroughly sponged out and again carefully and tightly tamponed with the iron and cotton.

Still the blood continued to trickle slowly through the cotton for two hours, and symptoms of prostration became so marked as to make me uneasy. I then resorted to the following expedient: A glass syringe with a long nozzle charged with four ounces of the persulph. ferri, diluted as above, was inserted deep down, beside the cotton, to the bottom of the vagina, and the whole contents gradually driven in; I then placed my hand on the vulva and pressed firmly for a few minutes, so as to retain the injection and give time for coagulation of the blood. This produced the desired effect; the hemorrhage ceased; the patient soon reacted, and by nine o'clock at night (eight hours after the operation) she was well enough for me to take my leave for the night without further anxiety. It had been necessary during the evening to give her opium and brandy.

18*th*. In satisfactory condition this morning; did not sleep much during the night; was a little nervous; pulse good, and is quite cheerful.

20*th*. Has continued well; no pain or fever; takes plenty of nourishment and sleeps well.

The distension of the vagina from the tampon and coagulated blood has been a source of a good deal of uncomfortable feeling, and to enable her to pass her urine, the part of the cotton and coagula in front pressing on bladder and urethra were removed the morning after the operation. The vagina was as completely filled by the cotton and coagula as it would

have been by the head of a fœtus at term. The coagula too made by the persulphate of iron are as hard as cheese. By means of a spoon-handle I prized out part of it yesterday, and the remainder to-day, together with the last of the cotton, and the sponge tent, which was found loose in the vagina. She was greatly comforted by the removal of this mass, and a free washing out with tepid water and chloride of soda. No examination of uterus yet made.

29*th.* Has progressed well in every respect since last report; requires no treatment but ablutions with tepid water and Darby's prophylactic; has been sitting up and walking about the room comfortably. Has had for two days previous to yesterday a little bloody discharge, *without any pain*, which was doubtless her regular catamenial flow, though less than usual in consequence of the recent hemorrhages she had undergone. Examined the os uteri with speculum and found the cut surface covered with healthy granulations and healing well. Permitted to go home with the injunction to return to Mobile by the 15th Jan., being two or three days in advance of the next menstrual period.

Jan. 19. Arrived in town yesterday looking and feeling well. On examination I could detect neither anteversion nor flexion; the position of uterus seemed normal; the os *in situ*, with a patch of granulations about the size of the little finger nail, not yet healed over. *Catamenia came on last night moderately, naturally, and without the slightest pain*, and this morning I found her walking about the room and anxious to go out shopping.

25*th.* Catamenia ceased on the fifth day, having passed through without discomfort. Discharged and sent home; apparently perfectly cured, except a little speck of granulations which will doubtless heal in a few days; directed to use with a syringe night and morning a heaping tablespoonful of common salt to a quart of water. I may here remark that this is one of the most invigorating and soothing washes for the vagina I know, and this idea was taken from an article in the London *Lancet* by Dr. Thudichum on injections of the nostrils; he found the salt and water much less irritating to the Schneiderian membrane than simple water, and this I have proven again and again in ozæna.

I repeat that the above case is typical of a large class that heretofore have been incurable, and although the procedure recommended may not be infallible, I feel assured that, if properly managed, it will bring relief to many whose lives are passed in suffering.

Sponge Tents.—Before closing I propose to say a few words on this subject. If properly made, and properly used, they are very useful in many of the diseases of the uterus, and may supersede the knife in a portion of those cases in which cutting is insisted upon by Dr. Sims.

The objections to sponge tents, as generally made, are, 1st, from their roughness, bluntness, flexibility, and rapid absorption of moisture, they are difficult to introduce; 2d, after remaining in the neck of the uterus for twelve or twenty-four hours, the sponge becomes so entangled in the raw or granulating surface, that it abrades the surface and often causes bleeding when extracted; 3d, of all materials of which tents are made, sponge is the most putrescent, irritating, and disgusting. To obviate these objections I have used in making them *a paste*, instead of gum Arabic, and a covering

of *goldbeater's skin*. The sponge is cut of the desired size, thoroughly saturated with the paste, and then with a strong wire inserted to support it, is firmly wrapped with twine; it is then trimmed and smoothed with sandpaper; in short, substituting the paste for mucilage of gum Arabic, the tents are made in the usual way. After the tent is thoroughly dried, and finished off, envelop it in a piece of goldbeater's skin as wide as the tent is long, and in length four or five times its circumference. The skin is smeared on one side with the paste and made to envelop the tent in its whole length like the covering of a cigar. After the covering is thoroughly dry, a number of perforations should be made, with the point of a penknife, all along its sides from end to end, in order to allow moisture to get into the sponge and produce expansion; when the ends alone are left open the expansion is too slow; to be certain of rapid expansion I usually place upon the extremity a tampon of cotton well moistened with glycerine and water to supply the requisite moisture. A tent made in this way is smooth, firm, and easily introduced, and what I consider a very great advantage, the goldbeater's skin, while the sponge expands, gradually unfolds, so as to form a constant barrier between the sponge and uterine surface. All the objections to the *sponge* tent are thus obviated, and I do not see how any thing of the kind can be made more perfect.[1]

If these tents are made with a small point you can, if you think proper, use any amount of dilating force, as they are as inflexible as wood. They however absorb moisture rapidly and become perfectly soft. A string should be attached to the outer end for its removal. In one case where I omitted this, the tent slipped into the womb and gave severe pain for fifteen minutes. The pain ceased and the tent was expelled in the course of the night. The wire should be removed before introduction.

[1] The paste I have made by the following formula, which was copied from a medical journal. One advantage over the gum Arabic mucilage is the antiseptic qualities of alum and lead.

"*White paste which will adhere to any substance.*—Make the following mixture: Sugar of lead, 720 grains; alum, 720 grains; both are dissolved in water. Take two and a half ounces of gum Arabic and dissolve it in two quarts of warm water; mix in a dish one pound of wheat flour, with the gum-water cold, till pasty in consistence; put the dish on the fire and pour into it the mixture of alum and sugar of lead; shake well and take it off the fire when it shows signs of ebullition. Let the whole cool and the paste is made. If it is too thick add some gum water till of proper consistency."—*Journal of Applied Chemistry.*

I keep this paste on my desk for general use, and find it excellent.

ART. X.—*Artificial Anus from Gunshot Wound, operated on by Free Abdominal Section.* By R. A. KINLOCH, M. D., late Surgeon of the Roper Hospital, Professor of Materia Medica and Therapeutics in the Medical College of the State of South Carolina.

LIEUTENANT T. G. B. was wounded in the abdomen on the 22d of October, 1862, at the battle of Bee's Creek. The ball entered below the right anterior-superior spinal process of the ilium, traversed the abdominal walls obliquely upwards from right to left, making its exit about three inches to the left of the median line, and below the umbilicus. The track of the wound, at its point of greatest depth, about two and a half inches to the right of the median line, implicated the peritoneum and the intestine.

Symptoms of shock were in due time followed by those of serious intestinal inflammation, with vomiting, constipation, excitement, tender abdomen, and disposition to collapse. On the eleventh day after the injury the more violent symptoms began to subside, with purulent and fecal discharges through the orifice of entrance. More than a month after the reception of the wound, a fecal operation per rectum was induced by an enema. This was the only one, and was believed to consist merely of the contents of the larger bowel that had cumulated previous to the injury.

Up to this time Lieut. B. had been under the care of my friend, Dr. Dupont, of Grahamville, S. C., to whose skill and devoted attention he was indebted for having thus far survived the severe injury. At the request of Dr. Dupont, I first saw him on the 13th of February, 1863. He was bedridden, feeble, and emaciated; there were several diffusive fecal abscesses discharging through fistulæ, and connected with sinuses leading to the now fistulous orifices of entrance and exit of the projectile. As a palliative means of relief, several sinuses were laid open, the orifice of entrance enlarged, and a seton passed through the track of the wound to limit the diffusiveness of the abscesses and direct the discharges to one dependent opening. Lieut. B. remained under the care of Dr. Dupont, as he was seventy miles from Charleston, and I could only hope to see him occasionally when other duties called me to his neighbourhood.

I visited him again on the 20th of March. The superficial diseased condition had somewhat improved, but I found it necessary to open another sinus in order to ascertain more correctly the position of the intestinal lesion. The finger could be passed into the perforation, but the great depth of the wound prevented any accurate knowledge of the relation of parts. I now advised patient to remove to the city, where I could better give him my attention. Early in April he suffered from increased abdominal pain, with febrile excitement and subsequent jaundice. For this condition he was treated with mild mercurials and opiates, by my friend Dr. Wm. H. Anderson, in the absence of Dr. Dupont.

On the 11th of May patient was sufficiently relieved of the late attack to start for the city. He travelled with great difficulty by ambulance and railroad, being compelled to remain recumbent. Upon his arrival here, as an attack upon the city was threatened, his destination was changed to the Summerville Hospital, twenty-two miles distant. I visited him there on the 27th of May, and through the kind courtesy of my friend, Surgeon E. E. Jenkins, then in charge of the hospital, I was enabled to assume charge of any operative procedure to be instituted in the case.

A thorough dissection of the abdominal walls about the contour of the opening, alone enabled me to correctly appreciate the intestinal lesion. By exploration with the finger and with a bougie, I now ascertained that the *artificial anus* communicated only with the upper or proximate portion of the intestine, which passed backwards and to the left; the lower or distal portion could not be discovered. The discharge which now oozed from the opening was a thin brown liquid, containing whitish particles; it was evidently composed in part of chylous liquid.

I expressed the opinion that a prospect of escape from early death could only be offered by an operative procedure, which would have for its object the direct union of the divided intestine, and restoration of the continuity of the canal. The only feasible plan seemed to me to consist in the hazardous proceeding of *opening the peritoneal cavity as the essential and primary step.* Without such an effort to save, death was only a question of time, as emaciation and exhaustion were progressing surely. After a full understanding of the serious character of the operation, and the many chances against its success, Lieut. B. decided, with a manly heroism, to accept the little hope it offered.

On the 8th of June, having been previously notified by Surgeon Jenkins of the favourable condition of the patient since my explorative proceedings of the 27th of May, I visited the hospital, and the patient being under chloroform, practised the following operation :—

The peritoneal cavity was opened by an incision in the median line, starting from just below the umbilicus, and extending downwards for three and a half inches. The index finger was then passed into the cavity, and under the right lip of the wound towards the seat of the artificial anus; in its passage some adhesions of the intestines to the peritoneum were broken up. A second incision was now made through the thickness of the abdominal walls, beginning at the lower end of the perpendicular wound, and running transversely to the artificial anus, so as to raise a triangular flap. The cavity was thus thoroughly exposed; the mass of intestines protruded; and with care I soon traced up the portion of intestine which ended in the artificial opening. The intimate adhesions of the gut at this point were next broken up with my fingers, and by light touches of the knife. The barrel of intestine was found to be thoroughly divided, or so deeply notched as practically to amount to division; and while the upper end was fixed to the contour of the opening through the abdominal parietes, the lower was reflected towards the cavity, and thus was the continuity of the intestinal channel interrupted. The upper end was of normal, or rather increased calibre, while the lower end was contracted, and the coats much thickened. As the next step in the operation I excised about half an inch of the upper, and about two inches of the lower portion of the gut, so as to procure comparatively healthy surfaces for apposition. The mesenteric portion of the bowel was not divided. But one small vessel required a ligature. My desire was then to invert the lower extremity of the gut, and, by the suture of Jobert, drag the upper end into this lower canal, so as to secure full contact of the peritoneal surfaces of either portion. But the contracted condition of the lower orifice precluded this plan, and compelled me to resort to simple apposition of the ends. These ends I fixed carefully together by a number of points of interrupted silver wire suture, and then by three additional wires, passed after the method of M. Lembert, I managed to bring together some portion of the opposing serous surfaces. During the operation, assistants, with soft

sponges, carefully prevented blood from entering the deep portion of the cavity, and, by means of soft towels wrung out of tepid water, protected the mass of intestines from undue exposure. The abdominal wounds were finally closed by stout silk sutures passing through the entire thickness of the edges; the ligature attached to the artery was brought out at the lower extremity of the transverse wound, and thus served to retain the intestine at this point. A soft compress, and a broad bandage around the abdomen completed the dressing.

The operation had been necessarily protracted, and during the performance the patient was kept entirely insensible by chloroform. Upon its completion, symptoms of depression were urgent, and required the free use of morphia and brandy. In the course of an hour he rallied sufficiently to be safely removed to bed. I returned to the city, and left the patient in charge of Surgeon Jenkins. The after-treatment advised was that with opiates and light nourishing diet.

From Surgeon Jenkins I learned that the case progressed with entire satisfaction; reaction was but slight, and called for no special interference. Patient continued hopeful and cheerful. The abdominal wound united successfully. On the third day after the operation some of the intestinal sutures gave way or cut through, and a fecal discharge of the usual character took place through the lower angle of the abdominal wound. On the seventh day patient complained of some abdominal fulness; an enema was administered, and brought a good feculent stool, with relief of uneasiness. From this time the intestinal flow through the natural way became fully established, and the bowels responded naturally; the discharge by the fistula, however, continued. Patient improved daily in strength, and began to gain flesh. In three weeks from the date of operation he was enabled to sit up in a chair fixed upon rollers, and to propel himself about the hospital ward. On the 10th of July he felt well enough to leave the hospital and return home, a distance of eighty miles by railroad. I had previously advised against any farther interference for the present. A month after reaching home he was enabled to exercise on his feet with the aid of crutches, and his nutrition and strength improved daily.

My engagements prevented me from seeing Lieut. B. again until the 18th of January, 1864. I found him then greatly improved in appearance. He was still using his crutches, but rather from habit than necessity, and was disposed to lean forwards when walking, to relax the abdominal muscles. The fistula still discharged a thin brown matter, varying in quantity at different times. He had daily stools of a healthy character. A careful examination of the fistula disclosed a condition resembling the artificial anus consequent upon sloughing of the intestine after strangulated hernia. The gut presented an angle to the abdominal opening, and its channel was divided, in part, by a bridge or spur-like process, over which the liquid contents had to mount in passing on towards the rectum. This was evidently due to the projection of the mesenteric portion of the bowel between the lips of the intestinal wound where these were united to the abdominal wall. As the first step towards curing the fistula, I concluded that this bridge must be destroyed. To accomplish the object, I visited the patient on the 11th of March, and adjusted Dupuytren's *enterotome*, with directions for the blades to be very gradually approached from day to day until the intervening tissue was divided. Patient was left in charge of Dr. Anderson. Saw him, with Dr. A., on the 28th of March; learned that the *enterotome*, under the almost too diligent attention of

patient, had cut through on the fourth day, but without any unpleasant results. The discharge from the fistula had promptly lessened in quantity, and now was hardly more than a brown serous liquid; the opening was smaller, and the spur could not be detected. As the tissues about the fistula were of a cicatricial character, I concluded that the actual cautery would be better suited for closing the orifice than the use of pins, or any form of plastic operation. I consequently applied a small button-shaped cautery to the contour of the abdominal opening, protecting the intestine by a little wet lint, forced more deeply into the canal.

Circumstances have ever since prevented me from seeing Lieut. B. From Dr. Anderson and himself, however, I have gathered further particulars of his case.

The cautery was repeated by Dr. A. several times during the months of April, May, and June, and at first promised good results. Finally an effort was made by Dr. Anderson to close the opening by means of deep-curved steel pins. This resulted also in failure. After this, Lieut. B. was forced to leave his home and go into the interior of the State, where he received no further surgical treatment. Upon his return home, after the close of the war, I received, in a letter dated June 24th, 1866, the following additional information :—

"The wound is still open, and I can feel, with the end of my little finger, the same wall or impediment that you once cut away with the long-forceps. It is not, however, so much of an impediment but that I would risk having the wall of the abdomen closed above it. There is frequently something like a hernial protrusion at the wound, but the compress keeps this back. My evacuations by the natural channel are very regular. My general health is good. I weigh *over two hundred pounds*, being not quite as heavy as before I was wounded. I can ride half a day in a buggy without fatigue, and can often walk a mile without resting; but generally I suffer if long on my feet. * * * * *

"The discharge from the wound varies constantly. Usually it is the colour and consistency of soft fecal matter, but at times I am troubled with a thin, slimy, serous flow, which escapes under the compress. I can commonly go from morning to night without washing, for the thick feces passes without escaping. A great deal depends on my diet; fresh meat always occasions a serous discharge, and most vegetables disagree. My diet is chiefly corn-bread and hominy, with salt ham and a great deal of milk. I think you could still do something more for me, and, had I the means, I would come to you without delay."

I concur in the expression of regret contained in the last sentence quoted, for I feel confident that surgery is capable of completing the cure in this interesting case. I have been induced to offer the notes for publication with no view of claiming the degree of success aimed at by the several operative procedures instituted, but because the history appeared to me to possess the following points of interest :—

1. It adds another instance of recovery after severe gunshot wound of the small intestine.

2. It is an argument against the almost universal practice of abandoning intestinal lesions to nature, rather than risk opening the peritoneal cavity.

3. It is a record of successful conversion of an *artificial anus*, with its attendant symptoms of failing nutrition, into a *fecal fistula*, compatible with good nutrition, and a high degree of health and activity.

4. It is illustrative of the readiness with which the function of a large extent of intestine can be resumed after a suspension of over *seven months*

(from October 22d, 1862—the day of the reception of the wound—to June 8th, 1863, the date of the operation for restoring the continuity of the intestine).

5. It must serve to encourage that hopefulness and boldness so essential to progressive surgery, and at all times preferable to despair.

ART. XI.—*Case of Elephantiasis Græcorum, treated by Ligature of the Common Carotid Artery on both sides.* By J. M. CARNOCHAN, M. D., Surgeon-in-Chief to the State Hospital, New York, formerly Professor of Clinical Surgery, &c. (With two plates.)

PATHOLOGICAL combinations exist, at times, in certain morbid growths, involving the cutaneous and immediate subcutaneous tissues, which render it somewhat difficult to give them a definite position according to conventional classification. Certain enlargements of the limbs, scrotum, labia majora, face, &c., usually accompanied by hypertrophy of the skin, distinct from phlegmon, from œdema, and from bloody tumours, have long been, and are still, described or designated under the name of elephantiasis arabica or arabum.

Patients affected, however, with elephantiasis græcorum, have sometimes presented not only œdema of the lower limbs, which is common, but the true hard and bulky enlargement of Arabian elephantiasis also.

The case described below, and carefully represented in the accompanying plates, was partially of this mixed character. The characteristic signs or manifestations, however, peculiar to elephantiasis græcorum, were, throughout its progress, so predominant that it can only be considered properly as a case of that disease.

We are informed by Pliny that the malady was indigenous to Egypt—"*Ægypte peculiare hoc malum*"—but we learn from other Latin and Greek authors, as well as from the writings of more recent observers—among whom may be mentioned Larrey, Heberden, Robinson, Adams, and Rayer—that the disease has been met with in most parts of the globe. It is undoubtedly very rare in the United States, where but few cases, as far as I am aware, have been seen.

CASE.—Mrs. Phebe B. was born in New Jersey, in the year 1814, of healthy parents, in good circumstances, who were also natives of the same State. Her father died of disease of the kidneys at the age of eighty, never having had any morbid growth; her mother also enjoyed good health until near the period of her death, which occurred at the age of eighty-five. She has three sisters and two brothers, who have been free from unusual disease, and are still living and healthy.

Until the age of twenty-eight, Mrs. B. had always been free from bad health, and, in fact, was supposed to have an excellent constitution. Her

complexion was fresh and healthy. About this time (1844), without any special cause, the disease began to develop itself below the corner of the mouth, on the right side of the face, in the form of a small pimple not larger than a grain of hemp-seed, and presenting on its surface a small whitish speck, like the secretion of a cutaneous follicle. This, when pricked or squeezed, exuded a small quantity of thin bloody fluid. The pimple remained stationary for some months, and then began to enlarge, assuming the shape and appearance of a discoloured, smooth, warty excrescence. This soon increased to the size of a filbert, and was removed by the knife, by a medical practitioner of the district, under the supposition that it was an encysted tumour. After this slight operation the bleeding was unusually profuse; caustic was applied upon the bleeding surface.

In about a year after the first operation, in close proximity to the cicatrix, a similar growth began to make its appearance, and, in about six months, had reached the same size. This was also removed, and was again attended by unusual hemorrhage. The adjoining tissues remained normal for seven or eight months, but were again attacked by another mammillated growth, which became more irregular on the surface, and of a reddish hue, attaining the size of a walnut in about two years. Excision was again resorted to for the third time, the bleeding, as before, being very profuse.

At this stage of the disease the patient, who had not been medicated before, began to take various medicines internally—such as sarsaparilla, iodine, iron, &c. A special "cancer-doctor" was also consulted, who prescribed some unknown compound without benefit. The disease was not abated by constitutional treatment, but continued to spread, the tubercular elevations becoming multiplied, and extending from the original focus of the disease in various directions. The patient now visited New York, and consulted an eminent physician of that city, who prescribed internal and external medication, baths, &c. She continued under medical treatment with some improvement of the general health.

She had now been suffering for ten years, from 1844 to 1854, without receiving any material benefit from treatment in impeding the progress of her disease. In the course of the extension of the disease the parts were always affected by increase of temperature, by pricking, burning, and painful sensations, and discoloration of the surface.

From the year 1854 up to the time I was consulted in March, 1858, the morbid growth assumed a more diffusive shape, and continued gradually to enlarge, the mammillated tubercles continuing to be evolved in increased numbers and size, invading the organs of sense, and giving to the countenance a most hideous appearance. In fact, the face had now assumed the aspect which is characteristic of elephantiasis græcorum, or the leontiasis of some authors. The tissues, however, under and around the chin and lower jaw, and on the neck, had assumed the hard pachydermatous nature and appearance of elephantiasis arabum.

By reference to the accompanying plate it will be seen that the disease had become developed into huge proportions, and that the face, head, and neck presented a misshapen, bulky, deformed mass. [*Vide*, Pl. I.]

On the 18th November, 1858, Mrs. B., when first seen by me, was in the following condition: The face, head, and upper part of the neck were enlarged to a frightful extent, sanctioning, by the character of the deformity, the term of leontiasis, used by the ancients to designate the dis-

ease. The morbid mass extended from an irregular transverse line a short distance above the superciliary ridges, downwards to the neck, as far as another line drawn across about an inch below the cricoid cartilage, and running backwards as far as the posterior margin of the sterno-mastoid muscle. Another line drawn upwards from the posterior extremity of the last, and passing upwards behind and above the mastoid process, formed the boundary of the main mass in this direction; while, anteriorly, the disease passed over the mesian line, and occupied in a similar manner the other side of the neck, and three-fourths of the other side of the face. The morbid growth was more developed on the right side than on the left. On the back of the neck, as low down as the sixth cervical vertebra, the skin was wrinkled, irregular, discoloured, scaly, and studded with flattened elevations rising slightly above the level of the skin, which was also similarly affected on the supra-clavicular regions and the upper part of the sternum. The hairy scalp was in the same condition, more particularly on the right side of the head.

The colour of the skin or complexion was a dark dingy maroon or purplish hue in the region of the face; on the neck the colour was dull and leaden, without any reddish tinge. There was a general sensation of harshness imparted to the touch in passing the hand over the mass.

The cutaneous tissues on the lower part of the forehead were discoloured, thickened, and furrowed with wrinkles. On the face the tissues were somewhat semi-elastic and boggy, and softer than on the region of the neck; here the tissues were positively pachydermatous and dense like elephantiasis arabum.

The scalp had become partially despoiled of hair from the disease; some of the hair also of the eyebrows had fallen out, and part of the eyelashes were lost. The eyelids were swollen, and so much hypertrophied as to project beyond the level of the forehead, and completely occlude the ocular fissure. Vision, on the right side, was entirely obstructed, and the power of elevating the eyelid was altogether lost. The nose was enlarged, irregular on the surface, and pushed towards the left side, where the tissues were not quite as tumid. The nostrils were blocked up and misshapen. There was no sense of smell. The alæ nasi were uneven and knobby, and merged into the rough and dense mass of the cheeks and side of the face. The cheeks, particularly on the right side, were much swollen and elevated beyond the natural level, rough, and deeply furrowed.

The lips were much hypertrophied, thickened, and deformed, and the mouth so occluded as to scarcely admit of the passage of a teaspoon into the cavity. The upper lip had an elongated appearance, rough, but not tuberculated, while the lower was beset with a cluster of mammillated elevations. Nourishment was taken with great difficulty, and mastication was almost impossible; taste imperfect.

The ears, particularly the right, were much enlarged and tumefied. The right ear stuck out or projected from the head; the *concha*, *tragus*, *anti-tragus*, and *lobule*, presenting one large, irregular furrowed mass of a dusky reddish hue. The *meatus externus*, on this side, was completely obliterated. Sounds were almost inaudible. The chin and neck presented a huge hypertrophied mass, extending to within a short distance of the sternum and clavicle. The tissues here were harder and denser than at other parts, rising above the level of the natural surface about four inches, and studded with numerous tubercular and mammillated elevations.

The integuments of the trunk and extremities, with the exception of

that on the sternal and supra-clavicular regions, did not present any manifestation of disease.

The general health of the patient was not good; she had sleepless nights, and had to be bolstered up in bed on account of the difficulty of breathing, arising from the pressure of the diseased mass in the neck upon the trachea. She had but little appetite, and was frequently feverish. The menstrual function was regular.

The patient, thus suffering and disfigured, with the disease progressing at a rapid rate, was willing to submit to any treatment which promised amelioration or relief. Therapeutic means the most approved had been unavailing, and it was futile to repeat them. It occurred to me that the morbid nutrition of the parts might be modified in a salutary manner by intercepting the main arterial supply, and that the perverted vitality or morbid action of the organic nerves supplying the capillaries, would in this manner be best reached and impressed.

I was also inclined to believe that in this instance the capillaries and smaller vessels were at fault by positive change of structure, and that at some portions of the mass the smaller arteries and veins were diseased and enlarged, as in cases of accidental erectile tissue. With these views, I proposed to put a ligature on the common carotid artery of one side, and if necessary, after a proper interval, to secure the arterial trunk on the opposite side.

Operation.—The operation of tying the right common carotid artery was performed on the 28th November, 1858. On account of the general thickening of the tissues, the usual relative points of guidance were not visible, and could not be made available in the first steps of the operation. The assistants being suitably arranged, and the patient placed on the table and put under the influence of chloroform, the head was turned slightly towards the left side. The external incision was then made through the dense structures, following the direction of a line drawn from the anterior part of the mastoid process to the internal extremity of the clavicle, commencing about an inch above the level of the upper border of the thyroid cartilage, and extending downwards for the distance of three inches and a half. The first incision divided the skin and platysma myoides, both of which were blended together, hard and vascular. The muscular fibres of the platysma were changed and effaced. The next incision was carried deeply, two-and-a-half inches, through dense infiltrated and vascular cellular tissue, and exposed the anterior border of the sterno-mastoid muscle. Beneath this border the deep cervical fascia, and the sheath of the vessels formed by it, were then laid bare. The pulsations of the artery could now be distinctly felt, and the internal jugular vein was seen bulging up, swollen with blood at each inspiration. By means of curved copper spatulæ, the lips of the wound were kept apart, and the hemorrhage, which had been profuse, was stopped by securing the bleeding vessels. The omo-hyoid muscle crossing the large vessels, and the loop of the hypoglossal nerve resting on the anterior surface of the sheath, could now be seen. The muscle was hooked upwards, and the deep jugular, which partially overlapped the artery, was gently pressed aside. The sheath of the vessels was now cautiously opened, and the artery separated from the vein to a very small extent by using the director very delicately. The vessel was now secured by passing the aneurism needle, armed with the ligature, under the artery, from without inwards, taking care not to include the pneumogastric nerve.

During the different steps of the operation much difficulty was encountered by the deep position of the artery. The hemorrhage was exceedingly profuse, showing that the smaller vessels ramifying through the hypertrophied structure were unusually active, enlarged, and numerous. These, however, were readily secured. The ligature came away from the main artery on the 28th day.

The operation was followed in a few minutes by a perceptible and general shrinking of the enlarged structures, and a diminution of the density of the mass; the colour became less deep, and the temperature was considerably lower. In two weeks the change became so great that the patient could see and hear; the eyelids were less tense, and a part of the globe of the eye could be seen. The wall of the obstructed *meatus auditorius externus* had shrunk, and again become tubular and permeable, so as to admit the undulations of air upon the tympanum; finally the general sensibility had become more natural. Although the ligature came away on the twenty-eighth day, the patient was not allowed to leave her bed until the thirty-first day, after which she was permitted to sit up and walk about.

Some three months after the ligature had been placed upon the artery, the shrinking of the mass became stationary, and there was a slight extension of discoloration or encroachment upon the sound tissues from some portions of the margin.

In June, 1859 (six months after the operation), the patient again paid me a visit. The process of diminution of the disease being now apparently passive, I thought it expedient to tie the common carotid trunk on the other side. This was done on the 14th of June, and the ligature separated again on the twenty-eighth day. The operation was accomplished with less difficulty than on the previous occasion, on account of the tissues on the left side being less hypertrophied, and of the artery not being so deeply covered. The effect of the second ligature was followed by the same general phenomena as were observed after the first. The tumefied parts shrunk farther, the colour became paler, and the temperature depressed.

Four months after this, October, 1859, the patient called upon me. Her general health was improved, and the tissues of the face were getting more mobile. At this visit I injected, with one of Pravaz's syringes, about fifteen drops of the solution of per-chloride of iron into the still enlarged tragus of the ear. The fluid entered the tissues freely, causing pain, discoloration, and hardening of the part. An eschar was formed, which was soon thrown off, leaving a healthy granulating surface, which healed well. The enlargement was diminished, and the appearance improved by this procedure.

In October, 1860, the curative process was apparently stationary or passive. The mammillated tubercles on the back of the neck had now become shrivelled and scarcely perceptible, leaving a surface somewhat softer and but slightly wrinkled or discoloured. Partly from the shrinking of the surrounding tissues, and partly from increased growth, several nipple-like tubercles on the lower portion of the cheek on the right side, had assumed the shape and size of a hen's egg. A strong double ligature was passed through this part of the cheek, with the intention of strangulating the projection at its base. This was partially effected in about a week, and the remaining pedicle was divided by the knife. A large granulating surface was thus left which healed readily, leaving a white solid cicatrix on the natural level of the cheek.

Saw the patient again in June, 1861. During the interval, since her last visit (October, 1859), her general condition had been good. The organs of the external senses were resuming their functions more naturally. A portion of the mass, about three inches long and two wide, situated under the jaw, and extending backwards towards the angle, although much contracted, still was slow in decreasing in size. This was removed by excision to the natural level. The exsected part proved to be very vascular and spongy, resembling the erectile tissue of aneurism by anastomosis. The wound was dressed to heal by second intention, and cicatrized healthily in six or seven weeks. In September following, a small portion of the lobule of the right ear was removed, which also cicatrized without difficulty. In May, 1862, Mrs. B. came again to the city for consultation, on account of an attack of acute conjunctivitis of both eyes. She soon recovered from this attack, and returned home. She was not put under any medicinal treatment, as the general health was good, and the curative process of diminution was progressing favourably and gradually.

From May, 1862, until November, 1865, the patient continued in good condition. In general, the skin of the face, head, and neck, during this interval, became softer, and the sensibility of the surface more normal; a part of the end of the nose and of the upper lip puffed up and enlarged. Free scarifications were used, which were followed by profuse flow of blood and serum. The incisions healed kindly, with contraction of the parts and marked improvement in appearance.

Towards January, 1866, an elevation made its appearance again on the upper lip. This was excised, and the parts returned to their more natural proportions. Nine months after this, a puffy, mammillated eminence sprung from the tip of the nose larger than an almond. This was excised from the cartilage, and the lips of the cut partly approximated by two metallic sutures. The cicatrization went on favourably, leaving the end of the nose but little disfigured.

December, 1866.—About eight years have now elapsed since the first ligature was applied upon the trunk of the common carotid. With the exception of occasional indisposition, generally arising from the effects of cold, Mrs. B. has enjoyed a very tolerable condition of health. At present all the functions are well performed physically and mentally. She is in good spirits, and is a useful person in the household of which she is a member.

The vision is good; the eyelids are free and open, and are under the control of the orbicularis and levator palpebrarum; the hearing is acute, the *meatus auditorius externus* being perfectly free and open. The senses of smell and of taste are now perfect. The general sensibility, dull and obscure before the ligature of the carotids, is now normal, and, as the patient expresses it, the surface feels to her like the natural flesh. The feeling of excessive heat in the parts has also subsided. The colour of the skin is much less deep. The general shrinking of the mass following the ligature upon the carotids has changed the hideous and bulky deformity into a physiognomy of much less and disfiguring proportions. [*Vide* Pl. II.]

Mrs. B. now sleeps in bed with complete comfort, which she was before prevented from doing by the bulkiness of the disease in the region of the neck. She can now move her eyelids, masticate freely, and rotate the head upon the neck, without impediment.

The nasal and buccal cavities are healthy. Occasionally tubercular elevations have arisen from the tissues originally the seat of disease, before

the operations. These have been amenable to excision and injections, which have been followed by healthy cicatrization.

There is at present no disposition in the disease to extend, but, on the contrary, a marked tendency toward further progressive diminution and shrinking in those parts where the level of the original surface is not attained.

The portions of the diseased mass which were excised, exhibited pathological changes of a marked character, as was at first diagnosticated. The tissues principally involved in the disease were the dermoid, the subcutaneous adipo-cellular layer, and the vascular. On the face, where the tubercular character of the disease was most manifest, the skin was covered with cuticle in the form of slight squamæ, under which the corion assumed a reddish tint. Numerous white specks were disseminated over the irregular surface, and these appeared to be the augmented secretion from the enlarged sebaceous follicles. The dermoid tissue proper was not much thickened on the nipple-like projections; the subcutaneous layer of cellular tissue was hypertrophied, and the mesh-work expanded and infiltrated with oily serum and lymph; the vascular tissues, arteries, and veins, ramifying through this morbid structure, were abnormally developed and active; finally, the tubercular elevations were formed principally from the adipo-cellular layer thus transformed.

The portion of the diseased structure excised from the neck under the jaw, was entirely different in character. The surface here was leaden, scaly, rough, and hard, and the skin thickened as in elephantiasis arabum. The cellular tissue was much hypertrophied, dense, infiltrated, and vascular. In some parts the arteries and veins were so developed as to assume the character of what is termed by Cruveilhier accidental erectile tissue—"*tissu erectile accidentel.*" The microscope revealed nothing of importance.

The functions of the brain are performed as well as at any period of her life. The memory is not in the slightest degree impaired, and the other faculties of the mind are equally undisturbed. In fact, there has been no alteration mentally from the operations on the common carotids.

NEW YORK, March 2d, 1867.

ART. XII.—*Successful Removal of a Fibro-plastic Tumour from the Body of the Right Vocal Cord, with the Aid of the Laryngoscope.* By HENRY K. OLIVER, M. D., Boston.

MR. H., an intelligent mechanic, and an amateur singer, aged forty-six years, came to me on the 25th of May, 1866, on account of an obscure affection of the larynx. He was accompanied by his physician, Dr. Geo. B. Coggswell, of North Easton, Mass. The history of his case is as follows:—

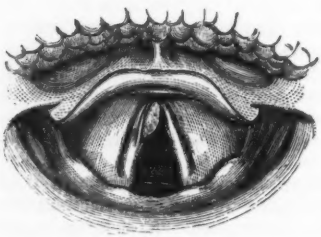
Mr. H. had always enjoyed good general health, and, previous to the existing difficulty, had never had any trouble with his throat worth mentioning. Some time in the spring of 1865, he noticed a slight hoarseness in singing—affecting particularly the upper notes—which at times was scarcely perceptible. This hoarseness gradually increased, until, in the early part of August, the natural voice disappeared, and a high unnatural tone took its place, and had continued. There had been no soreness or

pain in the larynx, no difficulty of breathing or of swallowing, and his previous good general health had continued. Since the commencement of the difficulty he had been under medical treatment, but had never been examined with the laryngoscope. Careful inquiry removed all suspicion of the existence of syphilis.

On making pressure over the larynx, neither pain nor soreness was experienced, nor was anything abnormal seen in the fauces. In speaking, the tone was of a high, weak, falsetto character, and every effort to produce the natural voice was unavailing.

On examination with the laryngoscope, a tumour was seen upon the right vocal cord, occupying, by a broad base, quite one-third of its length, commencing well up to its anterior origin. In size and shape the growth resembled the third part of a very large pea, flattened from above downwards. Its colour was pinkish-white, and its surface somewhat irregular, but smooth and shining. A more careful examination of its base showed that the growth had its origin in the deeper tissue of the cord, the superior surface of which bulged considerably upwards. From the amount of this distortion, I judged that more than one-half the length of the cord was implicated. The tumour, in its development, seemed to have forced its way through immediately below the free edge of the cord which ran, in a thin lip, over its upper surface.

Fig. 1.



The annexed engraving, Fig. 1, is a faithful representation of the neoplasm as it appeared at the first examination.

On an attempt at phonation, both vocal cords moved, with equal promptness, to the middle line, and the arytænoid cartilages came into close apposition. When the glottis was closed, the tumour pressed into the left cord just below its free edge, which was drawn up over the surface of the growth to a considerable extent. A similar, though much more limited movement of the free edge of the affected cord was also observed, so that a large part of the tumour was concealed from view. The only aperture available in phonation was, therefore, a short narrow opening extending from the posterior surface of the tumour to the vocal processes; as the cartilaginous glottis was manifestly closed.

Attention being subsequently directed to that portion of the sound cord which, in the closure of the glottis, met the apex of the tumour, it was observed that a permanent indentation existed there. This indentation will be found represented in the engraving.

Besides the neoplasm, nothing abnormal was noticed in the larynx, excepting a slightly congested appearance of the affected cord.

At this first examination the growth was shown to Dr. Coggswell, and to Dr. R. M. Hodges, also, who happened then to call at my office.

With regard to the nature of the growth, judging from its external characteristics and its deep origin, it was, apparently, fibroid, but of this I could not feel, at the moment, quite confident.

It will be seen that, in this case, I had to do with a neoplasm which presented unusual obstacles to a successful extirpation. Success, in the broadest sense of that word, in the removal of sessile growths upon the vocal

cords, is by no means easy of attainment; for it must be borne in mind that the inviolability of the cords, upon which depends the restoration of the voice, is second only in importance to the removal of the tumour. In this case, however, there was not merely a broad-based growth, but the base was buried in the substance of the cord, and, moreover, its seat was in the anterior portion of the cord, where, on account of the epiglottis, manipulation in the larynx is often so difficult. On the other hand, I had in my favour a throat which bore the presence of the laryngoscope well, and was of good capacity; an epiglottis which was in a sufficiently upright position, and, what was of no less moment, a willing and an intelligent patient.

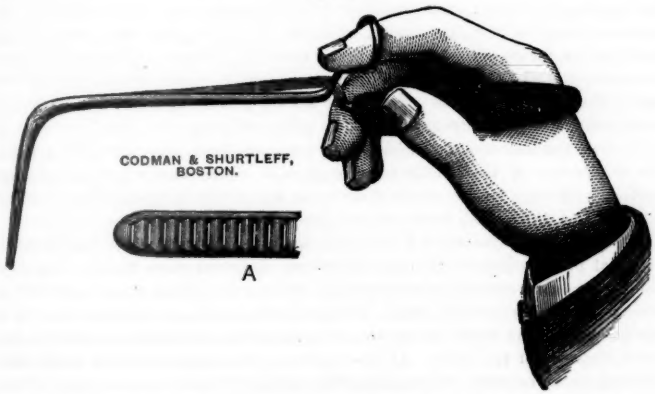
As to any decision upon the method of operating, that was, for the time being, held in abeyance until I had become satisfied as to the density of the neoplasm. I therefore contented myself, at the first visit, with endeavouring to determine the length which it would be necessary to give the descending branch of whatever instrument I should employ, and the angle which it should make with the horizontal branch. For this purpose, I passed the ordinary laryngeal silver probe, at various angles and lengths, into the larynx, until I had determined the points desired, and, as proof that the measurements were correct, I melted a small bead of nitrate of silver upon the extremity of the probe, and touched the upper surface of the tumour lightly, leaving a white mark upon it.

Pending further proceedings, I dispatched the patient to his home, with instructions to pass a curved bougie down towards the opening of the larynx, several times a day.

Thinking that, whatever consistence the growth might prove to possess, I might be able to crush its free portion, and possibly break up its attachment, with forceps of suitable construction, I had such an instrument made, nothing that I possessed seeming likely to answer the purpose.[1] With

[1] I annex an engraving, Fig. 2, and a short description of this instrument. It was manufactured by Messrs. Codman and Shurtleff, of Boston, according to a design

Fig. 2.



furnished by me. I am only persuaded to add to the already large list of laryngeal instruments, because several laryngoscopists have voluntarily expressed a

this forceps I endeavored, on June 3d, to grasp the tumour, but the space between it and the anterior angle of the cords was not sufficient to allow the blade of the forceps to be inserted, and the attempt was abandoned. I then decided to destroy the growth by caustics. Previously, however, I made a thorough tactile examination of the tumour, in order to determine its consistency, employing again the silver probe, with which I touched every part of its visible surface. The result convinced me that the growth was exceedingly dense in structure. I could not, indeed, produce any impression upon it, the probe glancing off when firm pressure was made. I convinced myself, however, of one fact which promised to aid me materially in the treatment, which was, that pressure upon the tumour itself was well tolerated, provided that no part of the instrument came into contact with the epiglottis, or with the walls of the larynx.

On the 9th of June, I made the first application of caustic, employing the solid nitrate of silver.[1] The point chosen was the centre of the tumour, as near to the edge of the vocal cord as I deemed prudent. My plan was to eat out, by means of the caustic, a cavity in the central portion of the growth, into which I should be able to introduce, safely, a sufficient quantity of caustic to destroy the base, the destruction of which would, of course, imply that of the free portion of the growth.

favourable opinion of this pattern. It is only intended for the crushing of large, or medium-sized growths situated upon the border of the vocal cords, or such as, growing from the ventricles of the larynx, or from the ventricular bands, project towards the median line of the glottis. Ordinarily, in the attempt to seize a tumour, whether successful or not, the closure of the larynx follows, and compels the withdrawal of the instrument. The forceps I have designed, is intended for use when the glottis is closed, so that what is generally considered an accident, (to be, if possible, avoided), is, with this instrument, a thing to be encouraged.

As will be seen by reference to the engraving, the instrument is, essentially, an ordinary laryngeal forceps, opening antero-posteriorly. The blades are, however, longer and narrower, and have a considerable bevel on the toothed edges (see portion of blade enlarged at A), so that in the closure of the blades between two opposing surfaces, like the vocal cords in their approximation, these surfaces are in no danger of being implicated, while the force is exerted upon any growth, which, in the closure of the larynx, is thrust between the blades. Cases will doubtless occur, now and then, in which, from an unusually sensitive condition of the larynx, the operator will find it difficult to seize a growth upon the border of the vocal cords, or of the ventricular bands, by means of forceps with short blades. In such cases, the instrument described will, I am confident, serve a useful purpose. The mechanism of the handle is recommended as preferable to the ordinary handles, with rings for finger and thumb, the use of which requires the elbow to be raised to a degree both awkward and uncomfortable.

[1] The porte-caustique which I commonly use is the ordinary silver bulb-pointed laryngeal probe, which is, by many operators, esteemed more highly than any other. My instrument is made of rather stouter wire than usual, and with a correspondingly larger bulb, which, instead of being solid, is hollowed out with a cup-like cavity, the mouth of which is of a diameter somewhat less than the external diameter of the bulb. At the fundus of the cavity two fine holes pass obliquely to the exterior. In the use of the nitrate of silver, a small bead of the salt is melted over the mouth of the cavity. When any other caustic is employed,

On the 13th, no effect of the nitrate of silver being noticed, I charged the porte-caustique with Vienna paste, by sprinkling the powder over the moistened surface of the sponge, and this I applied to the tumour at the point before mentioned, keeping it in contact with the surface as long as was possible. This application of the paste I repeated semi-weekly (with the exception of an occasional use of the nitrate of silver), until July 30, the only effect being to produce a slightly worm-eaten appearance at the part touched; while the main portion, manifestly stimulated by the caustic, had taken on an increased growth, and that to such a degree as to separate the cords perceptibly, so that the patient could not speak even in the former high tone, but only in whisper. The failure to produce any considerable effect upon the tumour arose from the fact, that on no occasion was I able to make anything more than a superficial application of the caustic, inasmuch as any firm pressure upon the surface of the tumour was prevented by its hard and smooth character. Attempts to make the desired amount of pressure were invariably followed by the glancing off of the instrument. I had persisted in the applications under the constant hope and belief that each one would be followed by some perceptible effect, and because I preferred to be over-cautious, on account of the danger there seemed to be of injury to the vocal cord by a free use of the caustic.

In anticipation of the failure of the caustic to accomplish, unaided, the destruction of the neoplasm, I had provided myself with an uncovered, double-edged, and sharp-pointed laryngeal knife, having a slender but strong stock, and with the length of the descending branch and its angle of curvature suited to this particular case.[1]

With this knife, therefore, on July 30, I made a superficial incision into the tumour, from front to back, parallel with the cord, and as near as possible to its edge. It cut like a dense fibroid mass; some blood followed the cutting, and some pain was complained of. After the withdrawal of the knife, I rubbed solid nitrate of silver into the incision.

On the 4th of August, there was a gangrenous appearance in the line of the incision of July 30, but the destructive effect was quite limited. I therefore made several gashes in the same line, and applied a solution of caustic potash of moderate strength. As the incised wound was narrow, I laid aside the porte-caustique which I had been employing, and used, on this and on all subsequent occasions, a simple silver wire, without the bulbous extremity. To the extremity of this I attached, firmly, a bit of

a bit of sponge is strung upon a piece of silk thread, the extremities of which are passed through the openings in the fundus of the cavity. The sponge is then to be pulled into the cavity, and, after the ends of the thread are securely tied exteriorly, is to be trimmed so as to project but slightly.

Fig. 3.

The annexed cut, Fig. 3, represents an enlarged section of the extremity of this instrument.

With this contrivance, any caustic, either in powder, or in solution, is easily and safely conveyed to the larynx. The excess of the external diameter of the bulb over the diameter of the mouth of the cavity affords, practically, to the laryngeal walls, sufficient protection from the caustic, both in the passage of the instrument into the larynx, and in its withdrawal after cauterization.

[1] This angle was 95°, and the length of the descending branch, from a line continuous with the horizontal branch, $3\frac{1}{4}$ inches to the point of the knife.

sponge. I had no hesitation in employing the caustic uncovered, as I had little difficulty in conveying the probe into the larynx, and I designed exhausting the sponge of the caustic in the wound.

The incising and the application caused considerable pain, which shot up into the right ear, and occasionally into the left, so that the patient could not resist thrusting his finger firmly into each meatus. There had been the same shooting of pain to the ear at the previous use of the lancet, and on one or two occasions also when the caustic was used without the lancet.[1]

Desiring to follow up the operations of the 4th, I advised the patient to remain in the city for a day or two; and, on the 5th, I made another deeper series of gashes, and applied again the solution of potash. The operation of the preceding day had given a dark, pulpy look to the line of the incisions. The patient reported that the bleeding from the wound had continued a number of hours after leaving my office.

On the 6th, I repeated the incisions, and applied strong nitric acid. Moderate spasm followed the application. The patient then returned to his home, reporting to me again on the 10th. On examination there was a decided boggy furrow where the incisions had been made, while, from its posterior extremity, small gangrenous shreds were seen hanging down. The greater part of the surface of the growth had also a grayish look. At this date I made additional incisions, turning the instrument, as much as was possible, so as to cut into the base of the tumour, and applied nitric acid.

On the 13th, the furrow was considerably wider and deeper, but the base did not appear to yield, and I therefore at this date, and again on the 17th, cut still deeper into the growth, hacking the base as well as I could, and applied, on each occasion, a stronger solution of potash than I had before used.

On the 20th, Mr. H. reported himself, speaking in a natural tone of voice for the first time in twelve months. The voice was, however, of only moderate strength. On examining the larynx, I found that the tumour was separated from its base for the greater part of its length, and was attached to its anterior portion by a short pedicle. The body of the growth was ragged and gangrenous, and had a greater vertical diameter than I had expected. In phonation the polyp was lifted up above the level of the cords by their approximation. The restoration of the voice was therefore easily accounted for. At this visit, after scarifying the base of the growth, I applied the solution of potash.

On the 24th, while scarifying in the vicinity of the attachment of the polyp, the patient gagged, and immediately afterwards complained of some obstruction in the larynx. On examination I found that the polyp had

[1] The nerve involved in the acknowledged sympathetic connection between the auditory canal and the larynx, is, according to Romberg and Toynbee, the auricular branch of the vagus. Dr. C. B. Fox, however (London Lancet, April 28, 1866), thinks that this branch of the vagus is not distributed to the meatus, but to the posterior part of the pinna, and that the nerves really concerned are the branches of the auriculo-temporal of the fifth cranial nerve, on the one hand, and the vagus on the other, the deep origin of the sensitive root of the former being in close proximity to the deep origin of the vagus in the floor of the fourth ventricle.

been separated from its attachment, but was not to be seen; and although I made as thorough a search as was practicable with the patient's uncontrollable efforts to relieve himself therefrom, I was unsuccessful in determining its locality. Finally, the polyp not coming to light, I instructed him to lie upon the couch, with his head and chest hanging over the edge, and to cough with some force. After two or three efforts, he spat the polyp into his hand. Immediate relief followed its expulsion, and, after a few moments' rest, I applied nitric acid to the base of the growth.

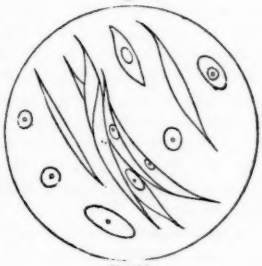
I can give no information with regard to the place of lodgement of the polyp. I feel quite positive, however, from the character of the patient's efforts to expel it, that it was lodged either in the larynx itself, or in the air-passages below.

The polyp, after having been some months in alcohol, is of a flattened oval form, being four lines in length, three lines in breadth, and two lines in thickness. Dr. Calvin Ellis, to whom I submitted it for examination immediately after its removal, favoured me, shortly after, with the following report:—

"The small growth removed from the larynx of Mr. H. was of considerable consistence, and only with difficulty divided by the dissecting needle, or crushed. A microscopic examination showed some fibres, and many nuclei and cells described as fibro-plastic."

The annexed engraving, Fig. 4, is copied from a drawing by Dr. Ellis, of the microscopic appearances.

Fig. 4.



X 382.

On the 27th, I found the sound vocal cord considerably inflamed, from the application made on the 24th, the removal of the polyp permitting this cord to come into contact with the caustic upon the base of the growth. On account of this inflammation no application was made at this visit.

On the 31st the inflammatory condition had disappeared. The base of the growth had a gangrenous appearance, but I could not satisfy myself that the treatment had, latterly, induced more than a superficial destruction. In fact, the main body seemed to have increased in bulk. After scarification, therefore, I applied the acid nitrate of mercury. The application caused considerable smarting, more so than any of the former caustics, but the spasm was slight and came on gradually.

On September 3d, the patient announced that the application at the previous visit, although causing, as above reported, very little spasm at the time, induced quite a severe one half an hour after leaving my office. An examination of the larynx revealed the unpleasant fact that the tumour was starting out again in spite of the treatment. I however scarified, and applied nitric acid.

At his next visit, on the 7th, the patient again spoke in the original high tone of voice. He could, however, speak in the natural voice by choosing a very low pitch. I now found that the tumour was nearly as large as when I first saw it. In fact, the portion in the cord was considerably more bulky than at first. Its growth had been surprisingly rapid during the previous seven days. In the closure of the glottis the

apex was buried in the opposite cord, as before, though not so deeply, so that in a forced attempt to produce a low tone, the cord, in vibrating, swung clear of the growth.

The condition of things was certainly not encouraging, for it was evident that a much more energetic method of treatment, which, of course, implied a greater risk to the integrity of the cord, must be substituted for the cautious method I had adopted. The latter had been successful in the removal of the free portion of the tumour, but had not made headway against the growth of the buried portion, stimulated as it had been by the action of the knife and the caustic.[1]

I therefore, at this visit, prepared to make the attempt to destroy the growth at a blow. With this design I made incisions into the tumour close to the edge of the cord, as at previous operations, but much deeper, so that the wound gaped perceptibly; and then rubbed in a saturated solution of chromic acid, having also on the sponge a small quantity of the acid in powder. I made an attempt also to insert the lancet into the buried portion of the tumour at some little distance from the edge of the cord, for the purpose of determining the possibility of safely introducing there a small quantity of caustic. But I found it impossible to insert the point without the exercise of more force than I deemed prudent. Pretty severe pain accompanied the incising, shooting up into the ears as before described. There was, however, less smarting from the caustic, and no spasm at the time.

On the 10th, the patient made his appearance, speaking again in the natural tone of voice. He reported having had a pretty severe spasm in the ears, three-quarters of an hour after leaving me. There had been also a good deal of soreness in the larynx since the last operation. An examination showed that the upper half of the free portion of the tumour had been destroyed; but the destructive effect of the acid, even upon the free portion, was not as great as I had hoped for and expected, while the base was comparatively unharmed. Approximation of the cords was, however, seen to be possible, and the vibrations of the sound cord were only to a limited degree interfered with by the undestroyed portion of the growth beneath it.[2]

The failure of the chromic acid to destroy the growth left me somewhat at a loss what caustic next to select. That class of caustics the action of which upon the living tissues is limited, had been faithfully tried. Even potash, a substance the effect of which it is notoriously difficult to limit, had, in solution, failed seriously to affect the neoplasm; so that I was finally convinced that the entire removal of the tumour could not be accomplished without taking a risk of injury to the cord.

[1] Cauterization in the larynx is accomplished at a manifest disadvantage, on account of the sensitiveness and mobility of the parts; and on account, also, of the fact that the quantity of caustic employed must be limited. It is, therefore, not to be wondered at, that in such neoplasms in this organ as can, from their locality, or other causes, only be cauterized in a superficial manner, an increase, rather than a decrease of their tissue is observed, such being a common result of superficial cauterization of morbid growths in other parts of the body.

[2] It is well known to observers on the physiology of the larynx that the cords arch upwards in phonation. This fact will explain the possibility of vibratory action in this instance.

I then selected caustic potash in powder as the substance to be next employed, hoping, by the exercise of special care, to confine its action to the limits of the morbid growth.

Having, therefore, laid open the wound of the last operation, and added fresh incisions so that it gaped more widely than ever, I rolled the extremity of the moistened sponge in freshly-powdered caustic potash, and, conveying it to the tumour, rubbed it with extreme care into the wound; and the same operation I repeated with fresh caustic. There was no spasm, and the patient left soon after for his home.

On the 17th, the date of his next visit, Mr. H.'s voice was still further improved, a fact that relieved me of a good measure of the anxiety I had had concerning the probable effect of the potash. He reported that he had had much soreness in the larynx, and that the breath had been quite offensive. He had also spat up, on the 13th, two or three bits of what seemed to be "dead flesh," which tasted offensively. On examination, I found, to my delight, that the entire growth appeared to have been destroyed, and that the vocal cord was quite uninjured. The free portion was certainly swept away, and a considerable excavation in the cord, where the base of the growth had existed, led me to hope that that portion also had at last yielded. Whether this were really so or not, I could not yet determine with certainty, as the cavity was lined with a greenish looking layer. There were, moreover, to be noticed, upon the inferior edge of the cavity, two small nodules which seemed to be remnants of the neoplasm. The breath was still somewhat offensive, and as the completeness of the destruction could not be determined with certainty until the cavity was cleared of its gangrenous layer, the patient returned home. As for the nodules, if they were portions of the original tumour, they were evidently isolated, and, separated thus from the support of the main growth, I hoped for their gradual disappearance.

On the 27th, the patient visited me again, when the edges of the cavity appeared to be contracting, though its gangrenous look had not yet disappeared.

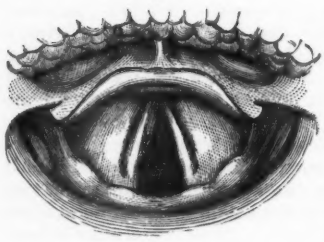
After this date I saw him only occasionally, nothing being done except to watch the progress of the case. The result was that the cavity became healthy looking, gradually filled up and contracted, and the nodules diminished in size. The voice became stronger, so that on his visit to me on the 17th of November, he reported that he had been able to resume his duties in the church choir.

My last examination of the larynx was on March 23, 1867, six and a half months after the final operation, at which date also I presented the patient to the notice of the Suffolk District Medical Society, at their monthly meeting, and read a report of the case.[1] At this examination the cicatrix presented the form of an elongated ellipse, somewhat depressed below the level of the border of the cord, the sides being formed by the lips which originally passed above and below it, their outlines being still visible. The right cord was, throughout its entire length, somewhat thickened, and the colour was slightly deeper than normal. The nodules had, apparently, quite disappeared.

[1] In a letter received from Mr. H., dated May 16, 1867, eight months after the final operation, he says, "My voice remains as good as when you last saw me, and, I think, is even a little better."

The annexed engraving, Fig. 5, gives a good representation of the appearances just described.

Fig. 5.



In the approximation of the cords, the cicatrix was seen to be quite pliable, so that in the production of the lower tones the internal border of the right cord preserved a regular outline. When, on the other hand, the tension of the cords was increased in the production of the higher tones, the border was, at the locality of the cicatrix, somewhat, though slightly, irregular. Either, however, from the presence of the cicatrix, or from the hypertrophied condition of the cord, its vibratory action was materially embarrassed, and, indeed, I was inclined to doubt if there were any such action at all, at least in the middle and upper tones.

The voice in speaking was very good, and it is doubtful if any one would have suspected that it had ever been seriously affected. Indeed Mr. H. affirmed that his own family found only a slight change from his former voice. In singing, also, he stated that he found the change to be not a very great one, except that there was some loss of power, and that the higher tones were rather hard and unsympathetic, so that he thought he should be obliged to discontinue the use of his tenor voice, and substitute baritone.

The result of this case can be justly considered satisfactory, when the circumstances of the nature of the growth, its locality, and its deep origin are taken into account. I am aware that the time occupied in the removal of the neoplasm might have been shortened; but, on account of its position in the cord, and my doubts as to its probable capacity of resistance to caustic action, I chose to err on the safe side, rather than risk, unnecessarily, the safety of the cord. Expenditure of time, in such cases, is matter of little moment compared with restoration of the vocal functions. The time might have been shortened had the patient been able to remain in the city, or to have visited me more frequently.

The chief points of interest in this case are the following:—

1. The nature of the neoplasm, which, according to Dr. Ellis, was fibroplastic, a species of growth quite rare in the larynx.

2. Its deep origin. This circumstance is also rare. The ordinary fibrous polypi in the larynx take their rise, for the most part, in the submucous areolar tissue. That the growth in this case had a deeper source was apparent at the first, from the laryngoscopal appearances alone. This would seem to have received confirmation subsequently by the examination, on the 7th of September, with the point of the lancet at some distance from the free edge of the cord, and from the depth of the cavity observed after the application of the caustic which insured the destruction of the neoplasm, although it is, of course, possible that the healthy tissues may have been implicated to a limited degree in the destructive effect. What

the tissue was which was the seat of the growth, it is not possible to say with certainty. It may have been the fibrous portion of the vocal cord (*membrana vocalis*); but my belief is, that it had a still deeper source, namely, in the vocal muscle itself (the horizontal fibres of the thyro-arytænoid muscle).[1]

3. Its power of resistance to the action of caustics. This seemed to me to be quite remarkable. It was not to be wondered at that its tissue did not give way under the earlier applications, unaided by the knife; but that it should not only resist, stubbornly, the combined agencies of the knife and the stronger acids, &c., but should even increase rapidly during their employment, is certainly noticeable. The superficial cauterization of morbid growths often induces, as has already been said, their more rapid development; at the same time, I cannot but think that none of the ordinary neoplasms of the larynx would so obstinately have resisted treatment.

4. The fact that, notwithstanding the unyielding character of the neoplasm, its substance finally gave way without, as far as is known, any of the surrounding healthy tissues being implicated in the destructive action. This was, perhaps, partly owing to my care in depositing the powdered potash.

With regard to the possibility of the recurrence of this tumour, there is, undoubtedly, some reason for apprehension; such being the tendency often manifested by growths described as fibro-plastic—or sarcomatous of some pathologists—in other parts of the body. The ordinary fibrous polypi of the larynx show no tendency to recur.

The means of illumination employed throughout the case was reflected artificial light, from an argand gas-burner, furnished with a single lens-light concentrator. Other accessories, such as head-rest, &c., were not used. The patient sat in an ordinary chair, holding the protruded tongue with the fingers of the right hand. I had at no time any other assistance in operating. The daily use of the bougie by the patient himself, for the purpose of diminishing the sensibility of the larynx, was continued throughout the treatment. Insensibility, however, was never attained to such a degree as to permit contact of the instruments with the epiglottis, or the sides of the larynx, without inducing closure of the organ.

It is happily no longer necessary, as formerly, to substantiate the fact of the presence of a neoplasm in the larynx in any particular instance, and of its actual removal by operative means through the natural passages; but, in passing, I may remark that, in addition to Drs. Coggswell and Hodges, the larynx was exhibited, at various stages of the treatment, to Drs. Warren, Cabot, Bowditch and Langmaid.

[1] "Sarcomatous tumours affect the areolar tissues, the fibrous membranes—especially the submucous—the muscles, inter-muscular tissue, * * *."—ROKITANSKY.

In conclusion, it may not be out of place, on account of their interest in a physiological point of view, to call to mind some of the vocal phenomena which manifested themselves, from time to time, in the progress of the case.

The loss of the natural voice was owing, of course, to a purely mechanical cause. The vibratory action of one cord was prevented by the tumour, and that of the other by the pressure of the apex of the tumour acting thereon like a damper. When the tumour was converted into a polyp, the impediment to the vibration of the left cord was removed, and, although the base of the growth still remained as an obstruction to the normal action of the right cord, the voice was nevertheless restored.[1]

At the commencement of the reproduction of the tumour, subsequent to the removal of the polyp, it was noticed that the higher tones of the scale were lost, while the lower were still available. Even when the tumour had acquired almost its original dimensions, it was possible for the patient to produce a low tone. These results were owing, as the laryngeal mirror showed, to the fact that the vocal cords were less tense in the production of the low, than in that of the high tones. In the former case, therefore, the vibrations had a more extensive sphere, and a greater arching upwards, so that, the affecting cord remaining motionless, the vibrating cord escaped contact with the growth.

I may again call to mind the restoration of the natural voice after the destruction, by chromic acid, of the superior portion of the tumour, a result only to be explained by the fact of the upward arching of the cords in phonic action.

In the production of the higher tones, on the other hand, the tension of the cords was greater, the glottis narrower, and the left cord came into intimate contact with the tumour, so that its vibratory power was completely annulled.

It should be remarked here that the tones of the voice, as thus restored from time to time during treatment, were of moderate force only, like those of the ordinary voice in speaking. In such tones it is acknowledged that the form of the glottis is slightly elliptical, and that its perfect closure need not and does not take place during vibratory action. In the powerful tones of the chest voice, on the contrary, the glottis is rectilinear in shape, and perfect momentary closure takes place.

With regard to the phenomena exhibited in the falsetto register, several interesting points may be mentioned.

It is universally acknowledged that in the production of this voice, only the thin edges of the cords are concerned, the vibrations being exceedingly

[1] Müller's experiments on the dead larynx show that it is possible for sound to be produced when one cord only vibrates, as in the case of unequal tension of the cords when a moderate force of the current of air is employed.

minute. It is also pretty well agreed that the glottic aperture is wider in the production of the falsetto, than in the production of the full chest tones. There is not, however, a unity of opinion as to the relative length of the glottic aperture in the falsetto and in the chest registers.

Without designing to enter upon the discussion of this mooted point, I desire to call to mind that, in this case, it is impossible that the glottis could have had a length greater than the distance from the posterior surface of the neoplasm to the vocal processes. The cartilaginous glottis was evidently closed, and, moreover, the sides of this portion of the glottic opening contain no vibrating element. Now, according to Mr. H.'s statement, his falsetto voice, before the affection of the larynx, was unusually deficient both in range and in musical quality. During the existence, however, of the morbid growth, I can bear witness to its good range and its good quality, the latter being quite noticeable. On the restoration of the natural voice, following the extirpation of the polyp, this quality of his falsetto was lost. Since the complete extirpation of the growth, also, the falsetto is inferior in all respects: but according to his own testimony, it is nearly, or quite as good as it ever had been.

ART. XIII.—*Case of Gunshot Wound of the Knee-Joint; Removal of the Ball from the Articulation; and Recovery.* By WALTER F. ATLEE, M. D., of Philadelphia.

JOHN DEVENNY, aged eighteen years, residing in 24th Street, below Naudain, was shot by a pistol-ball in front of the left knee, on the 26th of October last. The pistol was fired from a distance of a few feet, and in a direction downwards. He walked immediately after the injury to his residence, a distance of about half a mile.

When I first saw him, at 2 o'clock, about two hours after the receipt of the wound, he was seated in a chair, the limb extended, and suffering intense pain in the articulation. He was placed in bed, the clothing removed, and the parts examined. The ball was found to have struck immediately below the centre of the lower edge of the patella; there was no wound of exit, and by a slight introduction of the probe I satisfied myself that the ball had entered and had passed beneath the ligament of the patella. The patient was put to bed, the wounded limb was kept as motionless as possible; water-dressings were applied over the knee, and morphia administered in large quantities. In the evening the joint was greatly swollen, the pain was increased, and the general symptoms were very severe.

The rule laid down by all authorities in such an injury, is never to seek to extract the ball unless it shows itself, so to speak, of its own accord. In this case, the severity and rapid development of the local and constitutional symptoms were such that it must terminate fatally, or at best, in the loss of the limb above the joint, by amputation, if they did not speedily subside. It was determined, therefore, provided they continued, to endea-

vour the following day—before any *secondary* symptoms, local or general, could occur—to find the ball, and extract it. Besides, my own experience had shown me that the use of Nélaton's probe in finding leaden balls, and the use of chloroform in tranquillizing the patient, enabled many things to be accomplished, which had before been impossible, and I thought myself justified, under the circumstances, in hunting for the ball in this knee.

The next morning the patient being worse, he was, without any more delay, placed under the influence of chloroform, and the search for the ball was proceeded with. The limb was placed in the position it occupied when struck, and Nélaton's probe was passed into the wound in the direction said to have been taken by the ball. It passed in a direction somewhat downwards and outwards, immediately below the middle of the lower edge of the patella, through the ligament, and at a distance of two and five-twelfth inches came in contact with the ball, firmly lodged in the articulating surface of the tibia. It could be felt by means of the probe to be there buried to the depth of more than half its diameter. After prolonged efforts at seizure—they lasted nearly an hour—with a pair of unyielding dressing forceps, it was extracted. The appearance of the ball showed that by repeated pinches on the top, a part had been *pinched up*, so to speak, and thus finally a sufficient hold afforded to the instrument to drag it out.

After the removal of the ball the limb was kept quiet by means of splints and sand-bags; water-dressings were applied to the knee, and morphia was given as called for by the pain. On the 13th of November, the splints being still kept in place, the patient was allowed to sit up in a chair; on the 25th he went down stairs; and on the 26th, by the assistance of crutches, he walked three squares. On the 12th of December the splint was removed.

After the operation nothing came out from the joint, unless it be some few drops of synovia which seemed to be present one day upon the lint used in the water-dressing. The ball weighed a few grains less than one drachm.

The patient walks now (March 18th) quite well, aided by a cane. The joint is somewhat larger than that on the right side, and does not move more than about twenty degrees. This stiffness, naturally, will gradually diminish, but to what extent can only be conjectured.

This case has appeared to me to be worthy of being reported, for it would not have terminated so happily had rules formerly considered as established been followed; and they were not followed because by the administration of chloroform and the use of Nélaton's probe, a leaden ball can be searched for deep in a large joint, without producing any additional disturbance of importance, if the search be made gently; and if found and extracted, the patient's chances are incalculably improved.

TRANSACTIONS OF SOCIETIES.

ART. XIV.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1866. *Dec.* 5. *Abortion; Commencing Amputation of the Left Thigh, from being encircled by the Funis and probable Death of the Fœtus from Compression of the Cord.*—Dr. A. NEBINGER read the following case :—

I was called to Mrs. S——, who was suffering with uterine pains and hemorrhage. She informed me that she was nearly four months advanced in her pregnancy. She could not assign any cause for the threatened abortion. After having made vain efforts, for several days, to quiet the uterine disturbance, the abortion took place. I was present at the time. The fœtus was expelled with the amnion membrane entire. Having placed this in a basin, I proceeded to remove the placenta. This accomplished, Mrs. S. expressed a desire to know the sex of the fœtus. To satisfy her curiosity I opened the sac, when I was surprised and much interested to find the following conditions present: There was one turn of the umbilical cord (as is accurately represented in the accompanying figure) around the left thigh, about three-quarters of an inch above the knee, and so tightly encircling the limb as to have produced a deep groove in the soft tissues, and to have cut off the circulation of the limb below the part where this funis ligature was fixed.

The case is brought before the Fellows of the College because of the two points of positive interest which it involves, namely, the apparent cause of the death of the fœtus, by compression of the cord, and as a demonstration of the manner in which a fœtus in utero may sustain the *loss* of a limb, or a portion of one. Any fact which will throw a single ray of light upon the subject of congenital deformities and aid in forming a rational, or common-sense, conclusion in regard to how they are produced, cannot be without interest and value. Such defects are frequently accounted for by mothers, and indeed by some physicians, as the results of mental agitation, produced by seeing the deformed, etc. etc. By some physiologists and physicians these deformities have been accounted for by what they are pleased to call an arrest of development. Both of these modes are liable to grave objections, and are, I may say, generally given and received with doubts of their sufficiency. The case here presented, so far as it goes, negatives both those modes of accounting for certain congenital abnormities, and demonstrates how, by *mechanical* means, they may be produced. In this instance, the Fellows will see by even a slight examination of the fœtus, to which I now invite their attention, that it is evident if the cord had not been so tightly wound around the thigh, its compression would not have been so great as to have entirely prevented the circulation through it; the fœtus would then in all probability have lived,

yet the arrest of the circulation in the limb below the point ligatured by the cord would have been so great as to have certainly materially diminished the growth of the leg and the lower part of the thigh, and would in all probability have given rise to sloughing off of the limb, and the child would have been born with a stump as nicely rounded up at the point of separation as if the amputation had been performed by a most expert and skilful surgeon.

The accompanying figure is an accurate copy of a photograph of the fœtus, taken within twenty-four hours after its expulsion from the uterus.

The fœtus, judging from its altered condition and the statement of Mrs. S. in regard to the interruption of the catamenia, had been dead for at least two weeks before it was cast off.

1867. *Feb.* 6. *Report on Meteorology and Epidemics.*—Dr. W. LEHMAN WELLS read the following :—

In making a report on Meteorology and Epidemics, it is necessary to acknowledge my inability to establish any connection between the state of the atmosphere or the temperature, and the more severe epidemics, other than what is already known ; as that vegetable or animal decomposition and a certain degree of moisture are essential in many cases, and that cold is destructive to some epidemics and renders others inoperative for the time. Whether, however, the decomposing substance, the moisture, and the heat, produce the causes of epidemics, are themselves those causes, give rise to conditions requisite for, or at least favourable to, their development, or may not be in some instances entirely independent of them, is often not definitely known. The statistics will, therefore, be presented, and the prominent peculiarities and coincidences noted, in the hope that the exact relation in which they stand to each other may be discovered at some future time.

The statistics of the Board of Health of Philadelphia, although collected and arranged by that body with a great deal of care, are not as useful as they otherwise would be in consequence of the inaccuracy of the returns made by physicians, and of course more especially by so-called physicians, between whom and regular practitioners, unfortunately, no distinction is recognized by the law. To illustrate this inaccuracy, I shall take the month of January of the past year, where there are reported 57 deaths from debility ; 32 from convulsions ; 29 from inanition ; 29 unknown ; 24 from marasmus ; 4 from sore throat, and 2 from tumours. There are also 3 cases simply reported hemorrhage to 13 in which the seat of the hemorrhage is mentioned, and 8 of cancer to 15 in which the seat of that disease is indicated.

Besides these, 43 deaths are reported from old age ; 15 from casualties ;

1 from murder; 1 from wounds; 8 from gunshot wounds, and 1 run over on railroad.

There are here 277 cases reported (out of a total of 1402 in the month of January) where the cause of death is more or less uncertain.

After making allowance for these inaccuracies, and for others which are not manifest, but which the presence of these would naturally lead us to suppose must exist in no small amount, there will still remain a groundwork of valuable facts; valuable especially for the purposes of comparison with the death reports of other cities under similar regulations, and where the medical profession is similarly taught and organized, and with those of former years in the same city.

It is important also to remark that the reports of the Board of Health are based, not upon the deaths, but upon the interments, and that a small number must be deducted on that account, if we would arrive at accuracy.

From the meteorological observations kindly furnished by J. A. Kirkpatrick, A. M., Professor in the High School, Philadelphia, and which are entirely reliable, it appears that the year 1866 was remarkable for extremes, both of heat and of cold. Its hottest day, July 17th, was also the hottest for fifteen years, and although the mean temperature of its coldest day, Jan. 8th, was not as low as that of Jan. 9th, 1856, yet the thermometer at one period of the twenty-four hours was at —9° Fahr., or below the lowest point reached in 1856.

The mean temperature for the year was 54.90°, or about half a degree above the mean for the past fifteen years.

The mean pressure of the atmosphere, as indicated by the barometer, was 29.837, the same as that for 1865, and only $\frac{22}{1000}$ less than the mean for the past fifteen years.

The amount of rain and melted snow in the year was 43.573; ten inches less than in 1865, but only a fraction of an inch less than the mean of fifteen years.

Some of the more prominent peculiarities of the summer months (during which cholera made its appearance) were as follows: the mean temperature of the three summer months was 75.63°, or only one-fifth of a degree above that of the mean for fifteen years, which was 75.47°. Mean elevation of barometer in 1866, 29.747, or .072 less than the mean of fifteen years.[1]

Inches of rain in summer of 1866, 8.470, or 3.196 less than the mean of fifteen years, which was 11.666; mean relative humidity in 1866, 66.6; mean do. of fifteen years 66.

In June the mean temperature was 73.68°, or .62° above the mean of fifteen years, which was 73.06°. The barometer was 29.731 inches, or .058 below the mean for fifteen years, which was 29.789. Inches of rain in June, 1866, 3.390, to 4.322, the mean of June in former years.

In July, 1866, the mean temperature was 80.72°, or 2.72° above the mean of July in former years, 78°; 2.513 inches rain fell, to 3.622 the mean of former years.

During the hot weather in July, there were more deaths from heat fever or sunstroke than had occurred for many years. There were also five deaths in August. In all there were 131; 104 males and 27 females. This disparity is always found to at least this extent, and is of course to be accounted for by the greater exposure of men to the sun, and to ex-

[1] For complete tables, see the Journal of the Franklin Institute, Philadelphia.

hausting labours. 6 cases were boys, 1 girl; 26 between 20 and 30; 38 between 30 and 40; 35 between 40 and 50; 16 between 50 and 60; 8 between 60 and 70; and 1 over 70.

The number of deaths from this cause would have been greater had it not been for the employment of ice externally as a remedy, by means of which lives were undoubtedly saved which would have been lost before this remedy was brought into notice.

The total interments in Philadelphia, for 1866, was 16,803, which, estimating the population at 750,000, would give a proportion of 1 to 44.63, or 2.24 per cent.

Of these, 8851 were males and 7952 females; 4235 were males over 20 years of age; 4616 were male children; 3766 were females over 20 years of age; 4186 were female children, making 8001 adults and 8802 children. 931 were people of colour.

By deducting those buried in the city, but who died in the country, 643 in number, and the still-born, 798, we shall have 15,362, one death in 48.92, or 2.04 per cent.

The number of interments in 1865 was 17,169; in 1864, 17,582; in 1863, 15,788; in 1862, 15,097; in 1861, 14,468.

The greatest mortality in any one month of 1866 was in August, when 2401 deaths were reported, next in July, 2047, next in October, 1828. December was the healthiest month, only 982 dying.

The disease most fatal to children was cholera infantum, the mortality from which was 1090; next, convulsions, 663; marasmus, 552. Inflammation of the lungs caused 537 deaths; scarlet fever, 487; inflammation of the brain, 312; congestion of the brain 272; consumption of the lungs, 243; croup, 239.

The diseases which proved fatal to the greatest number of children, next to those above noticed, were, measles, 218; diphtheria, 187; dropsy of brain, 181; inanition, 176; inflammation of stomach and bowels, 153; diarrhœa, 139; typhoid fever, 136; cholera, 124; dysentery, 121; variola, 104; pertussis, 79; and cholera morbus, 54 = 1672.

Of all the deaths among children, 2232, or a little more than one-fourth, were from disease of the alimentary canal.

Cholera infantum, as already stated, caused 1090 deaths; in 1865 it caused only 884; in 1864, 641; in 1863, 930; in 1862, 629; in 1861, 618.

The deaths from diphtheria in 1866 were 192; 5 of them adults. In 1865 it was 260; 1864, 357; 1863, 434; 1862, 325; 1861, 489; 1860, 306.

Before 1860, no deaths from this cause were reported. This singular circumstance is owing to their being considered as modified cases of scarlatina, and so classified by the Board of Health before that time. They now report the deaths according to physicians' certificates, not only in this, but in all cases.

The total number of still-born was 798.

The mortality from the principal diseases of the respiratory apparatus was greater in 1866 than in 1865 or 1863; but not quite equal to the mortality in 1864. The deaths from congestion of the lungs, and catarrhal fever were, however, greater in number than even in 1864; this being principally owing to the first three months in the year, when influenza prevailed to a considerable extent, it being much more probable that a case of pneumonia originating in influenza would be designated catar-

rhal fever than that this somewhat vague term would be given to one of ordinary pneumonia.

In 1866 there were 1944 deaths from consumption, 1 to 8.64 of the total mortality, 994 males and 950 females. In 1865 there were 2026 deaths, 1020 males, 1006 females, 1 to 8.47.

	Deaths.	Males.	Females.	
1864	2089	1087	1002—1 to 8.42	Average of 7 years, 1 to 7.6.
1863	1955	966	989	
1862	1949	961	988	
1861	1817	910	907	
1860	1622	785	837	
1859	1505	780	725—1 to 6.03	
1858	1659	806	853	
		8309[1]	8257	

In former years the relative mortality from this disease was greater, as from 1840 to 1849 inclusive, when it amounted to 1 in about 6.76 from all causes.

This reduction, which is shown more than ever in the reports of the past two years, is probably owing (as was first suggested by Dr. Geo. B. Wood) to the general employment of cod-liver oil as a remedial agent.

On comparing the past nine years, we find (contrary to the rules usually laid down) that more males than females died of consumption in 1859, '61, '64, '65, and '66, and although in the other four years it is otherwise, yet the total mortality of the nine years shows a slight preponderance of deaths among males.

As usual, there are more deaths from consumption than from any other cause. The greatest number in any one month was 217 in January; the next, 185 in October; in July the smallest number died, only 116. There appears, however, to be no rule in reference to this, as sometimes the fewest deaths occur in October, or the other months of autumn. In summer, however, we seldom or never find a greater mortality than in the other seasons.

Between the ages of 20 and 30, deaths from consumption of the lungs are most frequent.

The progress and decline of the epidemic of petechial and other low forms of fever, are represented in the following table, where it will be seen that the epidemic culminated in 1864, when from typhus, petechial or spotted, and malignant fevers, and cerebro-spinal meningitis, there were reported 815 deaths, to 39 and 196 in the two preceding years, and 546 and 193 in the two following.

Smallpox caused 144 deaths; less than one-third of the deaths in 1865, when it was more fatal than for many years. Measles, on the other hand, caused more than twice as many deaths in 1866 as in any one of the four years preceding.

Three cases of yellow fever appear on the report of interments, but they all died elsewhere, the bodies being brought here for burial.

The table of deaths from miasmatic fevers shows a slight falling off in the mortality from that cause.

The deaths from pyæmia and erysipelas are in each case almost equal in number to those in 1865, but less than half those in 1864.

[1] Including 1865 and 1866.

Deaths from various Epidemic Diseases.

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total for 1866.	1865.	1864.	1863.	1862.
Cerebro-spinal meningitis	5	6	8	6	10	9	8	7	6	5	2	5	75	130	144	—	—
Petechial or spotted fever	5	2	2	2	2	2	1	–	1	–	–	1	18	65	263	53	—
Typhus fever . .	8	9	8	11	9	12	5	5	6	12	9	2	96	334	335	131	37
Malignant fever .	–	–	1	–	–	–	–	1	1	1	–	–	4	17	76	12	2
Typhoid " .	34	29	32	22	15	21	22	58	42	52	29	25	381	773	648	486	654
Scarlet " .	61	52	23	38	39	46	30	27	19	32	47	77	491	624	349	275	461
Smallpox . . .	18	25	15	14	16	16	9	5	5	6	10	5	144	524	260	171	264
Measles	14	2	9	21	34	53	44	25	3	5	4	7	221	54	90	82	109

	1863.	1864.	1865.	1866.	Quarters. 1st.	2d.	3d.	4th.
Pyæmia	44	78	41	38	7	15	8	8
Erysipelas	74	148	79	73	23	25	10	15
Puerperal fever	29	43	27	12	3	—	4	5
" convulsions . . .	11	18	19	27	9	5	3	10
Fever, bilious	8	9	11	15	2	1	9	3
" remittent	18	43	44	24	7	4	9	5
" intermittent . . .	7	12	12	8	2	2	2	2
" congestive	43	77	37	17	1	3	10	3
" pernicious	1	4	1	2	–	–	1	1

The deaths from puerperal fever were less than those in 1865, and little more than a fourth of those in 1864.

Cholera first made its appearance in Philadelphia in the latter part of June, by a few cases scattered about in various distant parts of the city, of whom two died. One case of undoubted cholera occurring at this time (which did not however prove fatal) was seen by Dr. Wilson Jewell, Chief of the Sanitary Committee of the Board of Health. There had been no cholera at the Quarantine.

Great exertions were made by the Board of Health to preserve the cleanliness of the city. Physicians were requested to report the nature of the premises where they saw a case of the disease, and if it were confined, crowded or dirty, measures were taken the same day to have the neighbourhood purified by chloride of lime, soap and water, and whitewash; and by closing entirely cellars and other very badly ventilated apartments. A corps of inspectors was also employed for the purpose of discovering and reporting such unhealthy places. It is undoubtedly in great measure owing to these well-timed exertions that we owe the comparative exemption of our city from what threatened to be a fearful scourge.

The greatest mortality in any one week was 127, for the week ending Oct. 13th. The disease then declined with much greater rapidity than it had advanced. Next to October, the greatest number of deaths occurred in August.

The total mortality was 910.

As regards age, the greatest number, 199, died between 30 and 40; next, 177, between 40 and 50; none under one year.

As regards location, by far the greatest mortality was in the 17th, 18th, and 19th wards, comprising the old districts of Kensington and Richmond. This circumstance is accounted for by the fact that water is there employed drawn from the river Delaware, and consequently contaminated with the impurities carried into that stream by the sewers, and washed up and down by every tide.

The mortality in these three wards was 301, or almost a third of the total mortality from cholera in the city, in one-seventh of the population.

The number of births registered during 1866 was 17,437, an increase over the previous year of 2,009 or 12.37 per cent.

There were 18 more twin births and 39 more coloured births than in 1865.

There were more births in October than in any other month; then in August, September, and July. In April, the number was least; then in the three summer months.

Several tables which we had prepared to show the mortality of all diseases, at various ages, and for each month in the year, are unavoidably omitted from want of space.

ART. XV.—*Summary of the Proceedings of the Pathological Society of Philadelphia.*

1866. *Sept.* 26. *Tuberculous Disease of Testis.*—Dr. PACKARD exhibited a tuberculous testis of the right side, removed by him in the morning from a man about 30 years of age, a patient at the Episcopal Hospital. Previous to removal, the diagnosis had been somewhat doubtful from the stony hardness and weight of the tumour, and its slightly nodulated shape. The man had had venereal disease, probably syphilis, twelve years ago. The operation was done in the usual way, except that the cord was compressed by the pin and wire loop, as in Simpson's third method of acupressure. On section after removal, the tumour was obviously tuberculous, breaking down into an abscess in its more central portion.

(This case did well so far as concerned the local disease, but after the wound had healed typhoid symptoms declared themselves, the patient's strength failed entirely, and he died of phthisis, as shown by the post-mortem examination, on the 28th of October.)

Oct. 10. *Cystic Disease of the Testicle from Injury.*—Dr. PACKARD exhibited a testicle affected with cystic disease, of singular origin, removed by him from a patient at the Episcopal Hospital; and gave the following account of the case:—

Robert Sims, an Englishman, æt. 28, employed on the Reading R. R., was struck, twenty-one months ago, on the left testicle, and on the sternum, by a plank which flew up against him. Necrosis of the sternum ensued, and part of the bone exfoliated. The testicle became much enlarged and swollen, and subsequently an abscess formed and pointed. The same thing happened five times afterwards.

Oct. 6, 1866. On his admission into the Episcopal Hospital, the left

testicle was enlarged, hard, lobulated, with an opening anteriorly from which was constantly exuding a ropy-yellow liquid, like synovia mixed with pus.

10*th*. The testicle was removed in the usual way, except that hemorrhage from the spermatic artery was controlled by passing a pin under the cord, and embracing the latter in a loop of wire, as in the third method of acupressure described by Simpson.

On examination the structure of the gland was found to be almost entirely substituted by a mass of cysts, filled with liquid like that discharged, except that it was less ropy.

Cold water dressing was applied, after the wound had been closed with lead wire sutures.

The case did perfectly well, except that some swelling occurred just above Poupart's ligament; this yielded to simple means, and on Nov. 5, the man was discharged entirely cured.

Oct. 24. *Cystic Disease and Degeneration of Kidney.*—Dr. JAMES TYSON exhibited the specimen, and made the following remarks:—

This specimen proved to be one of unusual interest. Careful examination shows the kidney to be cystic, made up of as many as six cysts of a size ranging from ¾ of an inch to 2 inches in diameter. Each one of these cysts was filled with a peculiar creamy matter, of a consistence, however, somewhat thicker than cream, yet so fluid as to tend to exude without pressure. In one or more smaller cysts the matter appeared more gelatinous, and somewhat translucent. The entire cortical structure was thus converted, there remaining only the fibrous capsular portion which was thickened and hardened. *Microscopically* this white cream-like substance was found to consist for the most part of *granular fat*, as indicated by its appearance and response to the reagent used (ether). Here and there, however, there appeared in the field of view, as exhibited by several slides, the so-called granule-cell corpuscles (Bennett), or exudation corpuscles (Virchow), in different stages of degeneration; some almost entire, filled with the dark, highly refracting granules, others partially disintegrated, others completely so, having liberated the granules which went to make up the *emulsion*, while the empty, shrivelled cells remained. These corpuscular appearances were brought out more distinctly by the aid of ether.

The glairy, gelatiniform matter was found to contain more largely these corpuscular elements. There were many of the large exudation corpuscles also in different degrees of degeneration, with granules and shrivelled cells. In other words, the degree of degeneration had not gone so far in these gelatinous portions as in the white cream-like product of other cysts. Since in my possession much free oil has exuded from the mass from solution and aggregation of the fat granules.

The above appearances in their different stages are quite significant, and aid us in explaining the mode of growth. The peculiar glairy and creamy products correspond precisely with the contents of certain ovarian cysts, a correspondence for the suggestion of which I am indebted to Dr. Edw. Rhoads, with whom I made the microscopic examinations a second time. The mode of formation of the contents of the cysts is similar to that by which the corresponding ovarian products are obtained, as described by J. Hughes Bennett, though the primary formation of the cyst itself must of course be different, as the ovarian cysts are usually supposed to begin in a dilated Graafian follicle. These cysts are lined with epithe-

lial cells, which, multiplying rapidly, throw off progeny after progeny of young cells which undergo fatty degeneration, become filled with granular fat, and finally break up, liberating the granules which they previously contained, and leaving mingled with them the shrivelled disintegrated walls described as present in the microscopic appearances. The glairy portions, as already stated, have not reached the same degree of degeneration as the white creamy matter, and, therefore, contain more entire granule-cells, and cells having undergone a less degree of degeneration.

I must state, however, that I was unable to detect any epithelium by examining microscopically the close scrapings of the septa of the cysts after this soft pultaceous matter was removed; such matter was composed almost entirely of fibrous tissue, as indeed might be expected, for all of the tubular structure had disappeared and in the onward march of the disease the fibrous capsule was reached, when the process of further formation of cells ceased, though those already formed could of course go on degenerating and producing the peculiar matter with which the cysts were filled, thus accounting for the advanced stage of degeneration of the greater part of it. By no means all of the septa were examined and upon some of them, of later origin, epithelium might have been found. Rokitansky says "there is often no epithelium in the larger cysts, and their inner layer is a nucleated, structureless, or striated blastema, externally splitting into fibres in the direction of the long axis of the oval nuclei it contains."

Nov. 14. *Spina Bifida; Death at age of* 32 *Years.*—Dr. WM. PEPPER, in presenting the specimen, read the following account of the case:—

Benjamin Miller, æt. 32, a merchant, was admitted to the Pennsylvania Hospital, July 17, 1866, reported to be labouring under sunstroke. During the first day he could return imperfect answers, but rapidly passed into a condition of profound insensibility; with upturned, oscillating eyeballs; involuntary discharges; irregular gasping, noisy respirations, but without any paralytic symptoms. He remained in this condition until July 21, when he died. During life, a tumour, oblong in shape, about three and a half inches long, one and a half wide, and the same in height, was noticed in the lower part of the dorsal region. After death, the following particulars were obtained: he had been all his life subject to severe attacks of headache; and whenever the tumour was pressed upon, he would have one of these headaches, with temporary delirium. For the three or four days preceding his admission he had been much exposed to the sun, and was much exhausted, with symptoms, however, of some obscure cerebral disease, rather than of true sunstroke. His habits were very intemperate.

Post-mortem twelve hours after death.—Blood dark and too fluid; lungs deeply congested; heart contained some fluid blood, with firm whitish clots; liver congested; slightly granular and tough; kidney congested; spleen, stomach, and intestines, apparently healthy.

Brain.—The membranes over the convexity were milky and thickened. Around the base of the brain and over the cerebellum, the membranes were coated with tough grayish lymph, matting the structures together.

The membranes, and brain substance were quite pale, and presented no appearance at all of recent inflammation. Upon laying open the lateral ventricles, they were found distended, each one containing about f℥iij of slightly turbid serum. The velum interpositum was opaque; and

the choroid plexuses cloudy, and probably enlarged. This condition of the membranes extended down over the pons: but the spinal meninges did not appear diseased.

The tumour in the back was found to consist of the thickened skin inclosing the sac of a spina bifida. The deficiency was seated along the spinous processes of the ninth and tenth dorsal vertebræ; and was about two and a half inches long by half an inch in width.

The dura mater of the cord was continuous over the sac, and adherent to the bone at the point of deficiency. The spinal cord was apparently quite normal, none of its fibres entering the sac of the spina bifida.

Intra-Capsular Fracture.—Dr. H. ALLEN presented the following specimen, accompanied with a brief history.

Mrs. ——, aged 70, suffering from chronic softening of the brain, fell from a lounge to the floor, and received a simple transverse fracture through the neck of the left femur within the capsule. The usual symptoms were manifested; the patient complained of no pain except when interrogated; death ensued on the third day after accident.

An autopsy was held within twenty-four hours after death; no detailed notes upon the condition of brain and arteries have been preserved. The upper third of the affected femur was removed, and the specimen presented to the Wistar and Horner Museum, by Prof. Francis G. Smith, who had charge of the case; it there came under the notice of Dr. A.

The fracture was immediately beneath the head, nearly transverse, without comminution beyond the detachment of a small thin fragment about the size of a half dime, from the posterior wall of the neck. The neck measured three and a half centimetres in length; the angle of the head and neck to the shaft was not perceptibly changed. Upon opening the detached fragment and shaft longitudinally, the interior was found much congested at the neck, portion of the head, and downward along the shaft to the extent of four centimetres. This was more conspicuous along the inferior and inner edge than elsewhere; that in the region of the great trochanter being healthy. At the seat of fracture, the cancellated structure was filled with clotted blood of a black colour, and extended in the shaft from the fractured surface, downward and outward to the extent of two centimetres. In the head, two similar clots were found near the superior and inferior borders. The bone around these clots was more deeply reddened than elsewhere. A fourth small clot was seen beneath the medullary membrane, upon the inner wall of the cavity, at the lower end of the congested area four centimetres below the neck of the bone. These clots with the exception of the last, were thought to have been derived from the blood soaking into the cancelli, from the ruptured vessels about the seat of lesion; the smaller inferior clot was probably obtained from a minute endosteal hemorrhage. Their presence was interesting as suggesting one of the causes of non-union in these fractures. In the head and neck of the aged femur, when the parts possess a tendency to absorption, such clots, owing to deficient number or want of activity in neighbouring vessels, might act as mechanical obstacles to resist efforts at repair.

Extensive Epithelioma of Stomach, without Distinctive Symptoms during Life.—Dr. PACKARD exhibited a stomach, with a portion of the duodenum,

pancreas, and liver; close to the pyloric orifice of the stomach was a very large, somewhat earshaped, flattened and lobulated ulcer, of epitheliomatous appearance. The head of the pancreas was not involved in the disease; the liver was obviously fatty.

The history of the case was as follows: Mrs. W. C., æt. 60, had been sick since early in June, 1866. I was called to see her on June 23; she was then suffering from oppression, loss of appetite, general weakness, and distension of the abdomen. Her pulse was feeble and intermittent; her urine somewhat scanty, but not otherwise abnormal. She was taking some purgative pills occasionally, with great relief. She had always been of active habits, although not of robust frame; had had twelve or fifteen children, three of whom only had lived beyond infancy.

I gave her iron and digitalis, and subsequently nux vomica and gentian, together with nourishing diet. She suffered much from flatulence, and took essence of ginger, and afterwards gin, with benefit. Occasional attacks of dyspnœa were controlled by Hoffmann's anodyne. From first to last she had neither vomiting, fixed pain, nor tenderness of the epigastrium, nor did the use of food, or of the pungent articles above mentioned, produce any uneasiness. Blood was never passed by her at stool, to my knowledge; although possibly the blackness of the discharges, attributed by me to the iron she was taking, was partly due to the former cause.

Late in the summer her husband had a dysenteric attack of some severity, and the fatigue of waiting upon and nursing him aggravated her own symptoms. Œdema of the lower limbs, which had appeared from time to time, became persistent and troublesome, and gradually passed into general anasarca. Her urine was full of uric acid and oxalate of lime; nevertheless, she seemed better and more cheerful. On Sunday, Nov. 11, she sat up for several hours, and got rather tired. As her husband was helping her back into bed, her head fell forwards, and she died in a few moments, obviously from failure of the power of the muscular fibres of the heart.

Autopsy twenty-four hours after death.—Mr. W. Müller, of the Pennsylvania Hospital, kindly assisted me. Body quite flaccid; muscles fatty; a good deal of fat in all the tissues.

Heart very fatty; full of soft dark clots; its own veins in a markedly varicose state.

Stomach greatly distended with flatus, but healthy, with the exception of the enormous epitheliomatous growth already spoken of. Gall-bladder full of gas. All the abdominal tissues were in a singularly emphysematous condition.

The other viscera seemed healthy, except that the liver and kidneys were in a state of advanced fatty change. The specimen was referred to a committee.

Nov. 28. *Examination of tumour.*—Report by Drs. EDW. RHOADS, H. ALLEN, and WM. PEPPER:—

Internal surface was flat, elliptical, and measured five inches in length, three inches three lines in width. It was situated at the pyloric extremity of the organ, with its long axis in the line of its circumference, and its lower edge impinging upon the posterior and inferior edge of the pylorus. It was defined by a conspicuously everted lip three lines high, though somewhat thicker and higher at its lower anterior edge. The

mucous membrane on the growth was smooth, glistening, and presented a mottled appearance, varying from the dull grayish hue of the healthy membrane to the blackish-brown tinge of capillary oozing. An irregular circular area, one inch in diameter, was seen at the postero-inferior part, which was surrounded by a uniform elevation of the mucous membrane, and corresponded to a preternatural thinning of the walls. Its surface presented several elevations of about the size of a mustard seed. Elsewhere the tumour was even, of uniform thickness save at its superior portion, where several doughy bossillations attained a thickness of one half an inch.

External surface, a number of irregular elevations were met with resembling enlarged lymphatic glands.

The stomach elsewhere was normal.

Examination of gastric growth, &c. Liver.—Cells contained abundant oil drops, their nuclei were for most part obscured. There was also a considerable amount of free oil in globules and granules.

Kidney.—Malpighian bodies were granular; tubules were cloudy and opaque, and contained granular fatty matter.

Stomach.—By scraping the surface of the healthy mucous membrane, a field was obtained, showing very numerous epithelial cells, granular and slightly fatty, and mixed with some free oil globules.

When the surface of the morbid growth was scraped in the same way, the cells obtained altogether resembled those from healthy portions of the mucous membrane: if any difference was noticed, it was that the former were slightly smaller. Upon cutting into one of the nodular masses of the growth from its peritoneal surface; the section presented much the appearance of a hypertrophied lymphatic gland, the tissue being firm and of a pinkish flesh colour. By scraping this surface, a whitish juice was pressed out, which was composed exclusively of rounded cells, quite uniform in size, being rather larger than pus-corpuscles: highly granular and generally showing a nucleus indistinctly through the cell contents. Upon addition of acetic acid, however, these cells cleared up markedly, and disclosed one or two nuclei, but in no instance was a trefoil arrangement of nuclei present. In some of the cells, the nucleus was unusually large in proportion to the containing cell.

A section of this portion showed an entire absence of fibrous stroma; the cells composing the tissue being partly of the character last described, and partly cells of a much larger size, with rather faint outlines and nebulous, minutely granular contents; containing one, or in a few cases, two, large clear nuclei, frequently with one small nucleolus. Sections of the morbid growth in other portions showed the same elements. In no place was any appearance of the glandules of the stomach noticed.

This new tissue was invested by the peritoneum externally, which was not abnormally adherent, nor at all thickened or opaque, and internally by the mucous membrane, which was perhaps thinned, but did not appear otherwise abnormal.

A consideration of the histological elements of this specimen, especially when viewed in conjunction with the age of the patient and the clinical history of the case, appear to your Committee to warrant the conclusion that we have here true adventitious tissue of a more or less malignant nature; and which, from its anatomical relations, was quite probably developed in connection with the gastric glands.

Dec. 12. *Cancer of Stomach, Liver, Spleen, and Mesenteric Glands.*—Dr. EDW. RHOADS exhibited the specimens and made the following remarks:—

Amos Noe, aged 54 years, a blacksmith of unusual strength, and without hereditary tendency to disease, began, in 1863 or the early part of 1864, to suffer pain in the right hypochondriac region with marked dyspeptic symptoms. He emaciated and lost strength quite rapidly, and assumed a markedly cachectic appearance. He continued able to work until a few months before his death; but his bowels became very much constipated, and he began to vomit frequently, with troublesome hiccough.

He took to his bed about two weeks before his death, which occurred December 11, 1866. For some time previously he had great œdema of the lower extremities and considerable ascites. His constipation became obstinate, and towards death he suffered from hiccough and constant vomiting of large quantities of grumous dark-coloured fluid; no severe pain was complained of at this time; there was no bronzing of the skin, though over the right iliac region from the pubes almost up to the edge of the ribs, there was discoloration, with dryness and cracking of the epidermis; this, however, was probably due to counter-irritants applied over this part; there was no jaundice at any time.

About a week before his death, the ascites suddenly disappeared within a period of thirty-six hours, leaving the belly flaccid; there was no simultaneous discharge of fluid, either from the skin, bowels, or kidneys, the only avenue of discharge being the excessive vomiting,

The above history was obtained from Dr. Stroud, under whose care the patient was during the last few weeks of his life, and to whose courtesy I am indebted for the opportunity of presenting the specimens.

I am also indebted to Dr. William Pepper, who assisted in the post-mortem examination, for his aid in describing the various lesions.

Autopsy twenty-four hours after death.—Brain and spine not examined.

Body small and much emaciated; belly scaphoid, the skin lying in folds.

Thorax.—Lungs entirely free, and contained a few calcareous nodules, but were crepitant throughout.

Heart small and flabby; the valves healthy; no traces of pericarditis or pericardial effusion.

Abdomen.—On laying open the abdominal cavity, the liver was found to extend one and a half inch below the ensiform cartilage, but on removing it, it was found not to be enlarged, its position being due to the adhesions described below. Over its convexity, especially over the right lobe, the diaphragm was very strongly adherent; but upon being separated, the adhesion was found to depend upon the development of five or six firm cancerous nodules in the substance of the diaphragm. These nodules varied from the size of a small hazel to that of a walnut, and as they increased in size had encroached upon the tissue of the liver, until they had formed cup-like depressions, the largest being three-quarters of an inch in depth. The peritoneum was smooth over these depressions, slightly opaque and thickened, and was moderately adherent to the peritoneum covering the nodules. Over the posterior part of the convexity of the liver, there were intimate adhesions between the liver and diaphragm, and in one place there was a cancerous deposit involving them

both. There were also several large nodules, three-quarters of an inch in diameter, of firm, almost scirrhous, cancer in the right lobe of the liver. The lobulous quadratus was much enlarged and prominent, and upon being incised was found filled with whitish softened cancerous matter.

The *gall-bladder* was very small and empty; its duct was compressed by the mass formed by enlarged glands in the fissure of the liver.

The *stomach* was large, distended, containing a large amount of dark slate-coloured, grumous, pasty fluid. The mucous membrane and walls appeared healthy, excepting towards the pylorus. This opening presented, internally, a nodulated, ragged, whitish or discoloured mass, with a sinuous irregular opening, through which the little finger could scarcely be passed. The pylorus and the neighbouring glands were involved in the cancerous deposit, forming an irregular oblong mass, several inches in diameter.

The pancreas was strongly adherent to this morbid mass, and contorted on itself, but apparently was not involved in the disease.

The exterior of the mass was smooth, and presented a beautiful arborescent distribution of vessels.

The vessels entering the fissure of the liver, the portal vein and hepatic artery, became involved in this growth, which involved the glands in the fissure of the liver, and were much compressed. The cystic duct was also pressed upon, and the pancreatic duct was distended with glairy secretion. It is not probable that the common bile duct was much compressed.

The *kidneys* were congested, but otherwise healthy; the right kidney was drawn upwards from its position by adhesions of its supra-renal capsule to the under surface of the liver, where it lay horizontally and strongly adherent.

The supra-renal capsules were enlarged, especially the right one, and very hard. Upon being cut open, however, there did not seem to be any abnormal deposit in their walls.

The *spleen* was of normal size, colour, and consistence; there was, however, a firm, cancerous nodule, the size of a filbert, on its edge just under the capsule.

The *intestines* were contracted, rather pale, and presented no adhesions. The mesenteric and mesocolic glands were cancerous, some of them being half an inch or even more in diameter, very hard and of a dull whitish colour on section.

The urinary bladder was healthy.

There was no peritoneal effusion, the cavity being, indeed, almost unusually dry.

Microscopic examination.—The supra-renal capsules did not present any characteristic appearances of cancer.

The nodule in the spleen was of a dense scirrhous nature, with a waxy, dead-white appearance on section. It appeared to have no true fibrous stroma, but contained numerous granule corpuscles, and large cells of irregular shape, oval, round or tapering, with one or two large nuclei, with distinct nucleoli. In addition to these, there were smaller cells, free nuclei, and cells resembling connective-tissue corpuscles.

Stomach.—1. Glands outside of the pylorus were whitish on section; less dense than the nodule in the spleen. The juice obtained by scraping the surface contained a few granule cells, as in the spleen, and irregular

granular cells, with one or two large nuclei; nuclei either free or imbedded in a granular stroma.

2. Internal surface of the mass around the pylorus was of consistency of cerebriform cancer, and contained many varieties of cells with one or two nuclei. Fragments of gastric glandules were also seen.

The denser portions of this mass contained the same forms of cells with numerous connective tissue corpuscles, but no regular fibrous stroma.

Liver.—The structure of the liver was quite healthy between the nodules of cancer, the hepatic cells being distinct, with clear nuclei, though perhaps with slight excess of granular fat. The lobulus quadratus presented a most beautiful demonstration of cancer cells, of all shapes, with one, two, or three large nucleolated nuclei.

Contents of stomach.—Quite numerous starch granules, oil globules, very varied forms of epithelial cells; masses of hæmatin; a few blood corpuscles and fragments of vegetable and muscular fibres. No sarcinæ ventriculi were found.

Contents of intestines.—A great deal of hæmatin, in finer granules than in stomach; epithelial cells; granular matter, fragments of vegetable fibres, and very abundant torulæ cerevisiæ.

Dec. 26. *Tuberculosis of Lungs, Bronchial Glands, and Abdomen.*—Dr. WM. PEPPER read the following report of the case:—

Fanny ——, æt. three, a delicate, poorly developed child, with strong hereditary tendency to tuberculosis, was admitted to Children's Home about Sept. 1, 1866. She was suffering with a mild attack of measles at time of her admission, and after the symptoms of this disease passed over, she continued thin, weak, and without appetite, with occasional cough and looseness of bowels. The diarrhœa resisted ordinary remedies, and reduced her strength extremely; the cough became more troublesome, and from Nov. 6th she was confined to bed.

Her treatment at this time consisted of ol. morrhuæ f℥j ter die; tr. cinch. comp. f℥ss ter die; a small quantity of stimulus and nourishing diet.

Nov. 16. Abdomen rather distended but apparently indolent. There is marked dulness in the right hypochondrium, for one and a half inch below margin of the ribs. She has several stools daily, of consistence of mush, dark-coloured and very fetid. Respirations are 64 to 72 in the minute; pulse 150, small and feeble. The entire anterior part of the right thorax is deficient in resonance as compared with the left; this is especially marked over apex toward sternum. There is also dulness over the manubrium. Respiration on right side is accompanied by fine mucous râles; toward the apex the breathing becomes bronchial, mixed with larger moist râles. Posteriorly, respiration is rather harsh and hissing, with fine râles. In the left side, the respiration is exaggerated, but unaccompanied by any abnormal sound, save a few moist râles under the scapula. She picks constantly at her nose, and this morning has a quite free attack of epistaxis; tongue smooth and reddish; no vomiting.

19*th.* Somewhat more comfortable; pulse about 140; respirations 55; percussion yields the same results, but the râles over the right side are rather smaller and less abundant; the cutaneous veins of thorax appear somewhat prominent; bowels still opened three or four times daily; passages very offensive; no more epistaxis.

21*st*. Condition much the same; pulse 140; respirations about 50; the child coughs frequently, but not in paroxysms, and every third or fourth respiration is accompanied by a kind of catch, as though there were some laryngeal or tracheal obstruction. The respirations on the left side are exaggerated and expiration is quite shrill. On the right side, as before noted, small mucous râles anteriorly and postero-superiorly. There is deficient resonance postero-superiorly, but the most marked dulness is over the manubrium and the right apex; the manubrium also appears unnaturally prominent; the stools are rather less frequent and more healthy in character.

30*th*. Rapidly sinking; her pulse more frequent; cough very troublesome; respirations abdominal, but without a sulcus during inspiration around base of thorax; facies changed; deadly pale; picks at nose, but there has been no more epistaxis. Belly doughy, apparently indolent, without tumour; three or four stools daily: results of auscultation much the same, save that râles over anterior part of right side are diminished; over apex, respiration is bronchial. There is to-day, for first time, a beautifully marked cracked-pot sound to the right of the sternum over the second rib. Percussion-note dull over right half of interscapular space; markedly dull over manubrium and inner third of right clavicle.

Death took place December 1st, 1866, three months from the beginning of the attack of measles.

Post-mortem examination twenty-six hours after death.—Brain and spinal cord not examined. *Thorax.*—Heart healthy; foramen ovale closed. *Left lung* free from pleuritic adhesions, crepitant throughout, but contained numerous isolated nodules of crude yellow and gray tubercle as large as peas. *Right lung:* the upper lobes were solid, heavy, entirely non-crepitant. Upon cutting them, the surface was found uniformly grayish, slightly granular, not friable. In places, nodules were of a yellowish colour and softer consistence than the rest; this was especially noticed along the posterior border of the lung, where in one point there was a little collection of puruloid fluid. The anterior parts of the upper lobe, hardly involving the apex, however, had been the seat of a very extensive deposit of yellow tubercle, which had maintained this part of the lung in the position of extreme distension. A large portion of this, however, had undergone softening, so that on removing the sternum and ribs a considerable cavity was disclosed, filled with grumous pus, and having for its walls the irregular nodulated remains of this tuberculous mass. The limits of this deposit could be traced all around it, as the surrounding lung tissue was of a reddish-gray colour, and the seat of marked gray tubercular infiltration. Whether the entire lobe had originally been in the latter condition, and its anterior portions undergone changes and passed into the form of yellow tubercle, could not be positively said. The lung was very strongly adherent all over, but especially over the upper lobe where the pleura had been the seat of tuberculous deposit. Over the vomica, the pleura seemed to be the seat of a similar firm tuberculous deposit. The lower lobe was not so dense as the others, but contained numerous nodules of tubercle, of which those along the posterior border contained more of the yellow form, and were further advanced toward softening. The bronchial glands were considerably enlarged, the largest, however, not much exceeding the size of a large Lima bean, one inch long by half an inch in width. But by their aggregation they formed a mass around the right bronchus, trachea, aorta, and pulmonary artery, about

the size of a small hen's egg. The right pneumogastric nerve passed through this, but did not appear to be much compressed. The glands contained yellow tubercle in nearly every instance, the deposit beginning at the centre, and in some instances, occupying the whole gland; in others, however, there was a layer of gland tissue surrounding the tuberculous deposit. One or two of the enlarged glands seemed to be instances of simple hypertrophy. Under the microscope, the deposit in the lungs and glands was found to contain typical tubercle corpuscles; but the enlarged glands in which no tubercle could be seen by the naked eye, could not be satisfactorily determined to contain it by the microscope.

Liver much enlarged, extending fully one and one-half inch below the edge of the right ribs. Marked peritonitis in the left upper part of the abdomen. Peritoneal covering of the spleen and adjacent parietal layer adherent, and gray granulations, intra-serous, were seen upon separating them. Transverse colon and upper part of the descending colon adherent by delicate, readily-lacerated, connective tissue filaments to the adjoining folds of intestine. No tuberculous granulations were detected between them however. These parts were quite wet with serum, but there could scarcely be said to be any peritoneal effusion.

Spleen contained a few very firm yellow granulations.

Small intestine appeared healthy; the mucous membrane of the latter half of the large bowel, however, was reddened, discolored, and softened, evidently in a state of chronic congestion. The colon was distended with flatus. The mesenteric glands were all enlarged, one or two of them being as large as hazelnuts.

The lower part of the abdomen appeared healthy.

Remarks.—The enlargement of the bronchial glands was clearly diagnosed during life from the character of respiration due to the pressure upon the right bronchus and trachea, and from the dulness on percussion in the interscapular space, the occurrence of epistaxis, and the enlargement of the cutaneous veins of the thorax, though this latter symptom was far from being marked, also aided in the diagnosis. Owing to the slight projection of the *manubrium*, however, and the complete dulness over it and the inner part of the right subclavicular space, a suspicion arose that the glands might be more extensively enlarged than at first appeared probable. The development of a cracked-pot sound to the right of sternum over the second rib increased the doubt, owing to the explanation advanced by Dr. Jenner, that not unfrequently this sound is produced here by the intervention of a thin layer of permeable lung tissue between the enlarged glands and the chest wall at the point of percussion. At the autopsy, however, these symptoms were fully explained by the peculiar form of tuberculous deposit in the anterior part of the upper lobe of the right lung.

The latency of the abdominal disease is also interesting; since the peritonitis was evidently recent, and yet did not reveal itself by distension, spontaneous pain or marked tenderness. The looseness of the bowels had continued from the attack of rubeola.

1867. *January* 23. *Recovery from Perforation of the Vermiform Appendix of the Cæcum.*—Dr. WM. PEPPER made the following remarks:—

The subject from whom the specimen was removed, a man about 70 years of age, was admitted to the Pennsylvania Hospital December 1, 1866, suffering from enlargement of prostate gland, with several false

passages. He died a few days subsequently, partly at least from considerable hemorrhage into the bladder.

At the *post-mortem* examination six hours after death, which was conducted by Dr. Williams, Senior Resident of the Hospital, the lungs were found healthy; the heart extremely flabby and soft; the liver and spleen apparently healthy.

The kidneys were lobulated, their pelves dilated; the ureters healthy. Bladder enlarged and thickened; prostate gland much enlarged, with several false passages through it. No calculi present in any portion of genito-urinary tract. Abdominal walls loaded with fat. The omentum, mesentery, and meso-colon likewise contained abundance of fat.

Mesenteric glands not enlarged. The intestines appeared perfectly healthy; and presented no thickening of their coats or abnormal adhesions. On raising the vermiform appendix, however, it was noticed to be unusually stiff, and presented on its free extremity a mass of reddish-yellow colloid matter, about the size of a hazelnut. This adhered closely to one side of the appendix, near its termination; was very glutinous when touched, and had no peritoneal investment. The consistence of its exterior was quite soft and gummy; but towards the centre it became more resisting, as though from the presence of some organized tissue; and on cutting it open a delicate trabecular structure appeared in the centre.

When examined microscopically, it was found to contain some crystals of hæmatin; some large corpuscles, with coloured granular contents, and a few large nucleated cells; but the bulk of the mass was composed of small bodies, arranged in close apposition, and polyhedral from mutual pressure, with a very faint tinge of reddish-yellow. These bodies were entirely non-nucleated, and resembled altered blood-corpuscles. Positive proof of their nature was readily obtained by allowing the specimen to soak in water, when the corpuscles swelled up, and many of them regained the typical appearance of red blood-disks. Prolonged soaking caused all the corpuscles to rupture.

Upon laying open the vermiform appendix, its cavity was found obliterated, the part being, in fact, converted into a fibrous cord. At the centre of the attachment of this colloid mass, however, there was a round opening into the appendix about two lines in diameter. The edges of this opening were smooth and rounded, and a probe passed through it appeared immediately in the centre of the colloid material attached to its peritoneal surface. The cæcum around the opening of the appendix appeared perfectly healthy. The appendix had a meso-colon extending along the greater part of its length. Its extremity, however, and the mass attached to it were perfectly free, and if they had originally become adherent at any point, the adhesion had been entirely destroyed, and all traces of it removed.

We have here, therefore, every possible proof of a pathologico-anatomical character, of a previous perforation of the appendix vermiformis. The entire absence of history, and of any foreign body in the abdominal cavity, of course leaves the cause of the accident uncertain. Blood and lymph have been effused, and have prevented the escape of a sufficient amount of the contents of the bowel to excite any considerable peritonitis. Either no adhesions have been formed with the parietes or elsewhere, or they have been so delicate as to rupture under the natural movements of this part of the intestinal canal. The clot has contracted, undergone considerable absorption, and has finally acquired this gelatinous

consistence, adhering firmly to the appendix. The small proportion of lymph effused has made the layer nearest the appendix more firm and organized, and has thus more surely closed the opening. The circumstance, however, which has rendered the cure permanent and complete, has been the adhesive inflammation, affecting the entire extent of the cavity of the appendix, and leading to its obliteration, and the transformation of the appendix into a mere fibroid cord.

This case is, I believe, quite unique, as affording post-mortem evidence of the possibility of the cure of this lesion. The probable length of time during which the clot had existed, and yet the blood corpuscles retained their distinctive features, is most interesting. And it may be added, that this case illustrates well the very trifling importance of the appendix, since its entire obliteration appears not to have been followed by any untoward symptoms.

On some Symptoms which follow Sudden Arrest of the Circulation in the Main Artery of a Limb.—Dr. JOHN ASHHURST, Jr., said: "I desire to call the attention of the Society to two symptoms which I have observed in several cases of deligation of the main artery of a limb, and which have been observed by others in cases of sudden arterial obstruction from disease. I refer to *hyperæsthesia* of the part below the seat of obstruction, and *increased temperature* in the same locality.

"It is generally stated by surgical writers that the first effect of the ligation of a large artery, such as the femoral, is a *diminution* of the temperature of the parts below, followed after some hours by an increase of heat, and still later again by a secondary diminution. I have, however, in two cases observed an immediate *increase* of temperature so rapid as to preclude the idea of its being caused by the afflux of blood to the surface in the establishment of the collateral circulation, and only explicable to my mind by taking into consideration the agency of the nervous system, probably a reflex condition being induced somewhat similar to that which produces the increased temperature in injuries of the upper part of the spinal cord. My observations have not been made with the thermometer, and are, therefore, of course, incomplete. My object in bringing them forward at this time is merely to invite others who may have the opportunity to unite with me in their verification.

"The other symptom to which I have referred, *hyperæsthesia*, I do not find generally noticed by surgical writers. I have observed it in three cases in which I have tied the femoral artery for popliteal aneurism; in the case where it was most marked, the excessive sensibility not entirely disappearing for a week or ten days. This symptom was also very prominent in a case of embolism of the common iliac artery, which Dr. Hutchinson reported to the Society in April, 1862.

"The sensory nerve fibres of the part below the seat of obstruction feel the loss of arterial blood (the local anæmia, as it were), and transmit an instant warning to the sensorium. Can we not here recognize a beautiful provision of nature, giving a caution to the patient to avoid pressure or rough handling of the limb, which, in the impaired state of the circulation, might easily produce excoriation and even sloughing?

"I once met with a case of general anæmia, in which the patient could not cross one leg over the other for a few minutes without the upper one 'going to sleep,' in the popular expression; an extremely disagreeable

symptom, which fortunately disappeared with the restoration of the general health."

Dr. PACKARD stated that one of the cases referred to by Dr. Ashhurst had been under his care at the Episcopal Hospital, in August last, with a popliteal aneurism in the other limb, for which ligation of the femoral artery had been resorted to. On that occasion, although a rise of temperature was not noted in the limb operated on, it was found expedient to diminish the thickness of the wrapper of raw cotton placed about it within a few hours after the tying of the vessel.

There was not present, however, the hyperæsthesia which was so marked in the other limb, as mentioned by Dr. Ashhurst. There was, and still is, such a condition of the long saphenous nerve, so that if the limb is touched anywhere in its course there is a marked "shudder" induced; but this must probably be ascribed either to a pricking, or to a partial division of the nerve at the time when the vessel was tied. Nothing like general hyperæsthesia of the limb has at any time existed. This difference between the behaviour of the two limbs of the same individual, under similar operations, seems worthy of notice.

February 27. *Supernumerary Rib.*—Dr. WM. PEPPER exhibited a specimen presenting a bifurcation of the fourth rib on the left side. The bifurcation occurred about two and a half inches from the sternum, and each branch was connected with this bone by a distinct costal cartilage. The specimen was removed from the body of a male adult, who died of pulmonary tuberculosis; no other anomalies were discovered.

REVIEWS.

ART. XVI.—*Disinfection.*

1. *Traité des Désinfectants sous le Rapport de L'Hygiène Publique, etc. etc.* Par M. A. CHEVALLIER, Pharmacien-Chimiste, Officier de la Légion d'Honneur, etc. etc. Paris, 1862. pp. 180.
2. *Third Report of the Commissioners appointed to inquire into the Origin and Nature of the Cattle Plague.* London, 1866.
   a. *Microscopical Researches on the Cattle Plague.* By LIONEL S. BEALE, M. B., F. R. S.
   b. *On Disinfection and Disinfectants.* By R. ANGUS SMITH, Ph.D., F. R. S.
   c. *On the Application of Disinfectants in Arresting the Spread of Cattle Plague.* By WM. CROOKES, F. R. S.
3. *On Deodorization and Disinfection.* By THOS. HERBERT BARKER, M. D., F. R. S. E. (Hastings Prize Essay.)
4. *A Manual of Practical Hygiene, prepared especially for use in the Medical Service of the Army.* By E. A. PARKES, M. D., F. R. S. Second edition. London, 1866.
5. *Proceedings and Debates of the Third National Quarantine Convention, held in the City of New York.* 1859.
6. *Disinfection.* By E. R. SQUIBB, M. D. Brooklyn, N. Y. (Report of the Committee on Disinfection to the Academy of Medicine.)
7. *Chemistry, Theoretical, Practical, and Analytical, as Applied and Relating to the Arts and Manufactures.* By Dr. SHERIDAN MUSPRATT, F. R. S. E., M. R. I. A., F. G. S. Vol. I. p. 556. Art. "Disinfection."
8. *Hints on the Control and Prevention of Infectious Diseases in Camps, Transports, and Hospitals.* By ELISHA HARRIS, M. D. Sanitary Commission Document, S.
9. *On the Utility and Application of Heat as a Disinfectant.* By ELISHA HARRIS, M. D. (Proceedings of the Fourth National Sanitary and Quarantine Convention, 1860.)
10. *North British Review*, June, 1866. Art. VIII.—Disinfection.
11. *Annual Report of the Metropolitan Board of Health*, 1867. New York, 1867.

HISTORY.—The history of the practice of disinfection is full of interest. Many agents employed for this purpose, and most approved by the moderns, were known to the ancients. Thus, we find that sulphurous acid, recently strongly advocated by Dr. Polli, of Milan, and Dr. Dewar, of Scotland, was used by Ulysses to destroy the odour and toxic properties, of the gaseous products of putrefactive decomposition (*Homer's Odyssey*, Book xxii.), and the tar compounds were the chief agents in the ancient process of embalming. These became "lost arts," to be re-discovered in modern times. The ancients were also well acquainted with many of

those hygienic evils against which disinfection is directed. The Romans early learned the dangers of crowding, and the necessity for a proper system of sewerage. Hence the height of the houses was restricted to seventy feet, and the streets widened, by Augustus. The sewers (*cloacæ*) of Rome were of vast size and great extent. According to Livy (lib. i. cap. xxxviii.), these were first made by Tarquinius Priscus, but the principal sewer (*cloaca maxima*) was built by Tarquinius Superbus.[1] There were openings at regular distances to permit the surface-drainage and sewerage to flow into the sewers (*Horat. Sat.*, ii. 3, 242),[2] and a police force[3] was kept for the purpose of cleaning out these receptacles. The water with which the city was so liberally supplied was used (*Plin.*, xxxvi. 15) to flush the sewers, and carry their contents into the Tiber. Our modern schemes of drainage and purification of sewers is not much in advance of the ancient practice.

Boyle, in the early part of the seventeenth century, revived the study of disinfectants and the practice of disinfection. Pringle, in 1750; Guyton de Morveau, in 1773; and Fourcroy, in 1791, proposed agents for disinfection. Sir John Pringle, as the result of his "Experiments on Septic and Antiseptic Substances," recommended "various salts, and the astringents and gum resins of vegetables and fermenting liquors." Guyton de Morveau strongly recommended chlorhydric acid gas, and Fourcroy was the first to propose the use of chlorine (Chevallier).

The actions and uses of disinfectants have been placed upon a more secure and scientific basis by the labours of recent chemists. Conspicuous amongst these are Angus Smith, Crookes, Herbert Barker, Parkes, and Chevallier, whose works are named at the head of this article. We should not omit mention of the very important contributions made by our own countrymen, Drs. Elisha Harris, of New York, and Squibb of Brooklyn—especially the former, who is entitled to the merit of being one of the most active and practical sanitarians in these States.

SUBSTANCES TO BE ACTED UPON BY DISINFECTANTS.—To give scientific value to the knowledge gained in the study of disinfectants, and accuracy to the methods of applying them in practice, it is necessary to know something of the physical and chemical characters of morbific matter, or at least of its habitat. This knowledge is, as yet, unattainable; nevertheless, some of the authors before us have attempted to achieve it.

Mr. Crookes classes the morbid matters, "the putrefactive products of animal and vegetable matter," as follows:—

Sulphuretted Hydrogen.
Phosphuretted Hydrogen.
Ammonia.
Phosphorus and Nitrogen, bases of complex constitution.
Acetic, Butyric, Valerianic, &c. Acids.
Carburetted Hydrogen.
Hydrogen.
Carbonic Oxide.
Nitrogen.
Various animal and vegetable products of little or no activity; and
The special virus of infection.

Of all these substances none are positively known to produce any specific form of disease—except, of course, the special virus, whose chemical and physical properties are unknown. The actions of the others have

[1] Foros in circo faciendos cloacamque maximam receptaculum omnium purgamentorum urbis, sub terram agendam.—*Titi Livii*, lib. i. cap. lvi.

[2] ——— Qui sanior ac si
Illud idem, in rapidum fluvien jaceretve cloacam?

[3] Curatores cloacarum.

been studied, and the means of destroying them, chemically, are sufficiently understood. Unfortunately our disinfectants are directed chiefly against the least dangerous, and are not known to be efficacious, except to a very limited extent, against the real morbific matter—the special virus. Although the products of the putrefactive decomposition of animal and vegetable matters do not produce specific forms of disease, they unquestionably exercise no little influence as predisposing causes, especially of the zymotic diseases. Hence it is a hygienic problem in every civilized community, how to get rid of these products. In all large cities the gaseous compounds of hydrogen with carbon, sulphur, phosphorus, nitrogen, and the volatile fatty acids, are given off from the cesspools and sewers. During the late epidemic of cholera in Cincinnati, we saw numerous instances of the influence of sewage gases in increasing the virulence and mortality from that disease. Thus, tenement-houses situated about the open mouths of sewers, in several localities under our observation, were almost depopulated by cholera, when the other hygienic conditions were not unfavourable.

Herbert Barker, in the course of some experimental investigations on malaria and miasmata, has shown by direct experiment the deleterious influence of sewer-gases. Three dogs, confined in a box into which sewer-gases, consisting of carbonic acid, sulphuretted hydrogen, and sulphide of ammonium were conveyed, suffered from vomiting, purging, and a febrile state. In some similar experiments we failed to induce these effects, probably because the trial was not continued a sufficient length of time; for introducing, at the end of a week, an unexpectedly large amount of gas, the life of the animal experimented on was destroyed in an instant. Parkes has collected numerous observations, for and against the influence of sewer-gases in the production of disease, and has embodied his conclusions in the following statement:—

"Every one must have seen instances in which headache, sickness, diarrhœa, general malaise, and, after a certain time, great depression of health, with more or less anæmia, were produced. In some cases I have known decided febrile attacks, lasting three or four days, and attended with great headache and anorexia. In some cases, houses into which there has been a continued escape of sewer air, have been so notoriously unhealthy that no person could live in them, and this has not been only from the prevalence of fever, but from other diseases."

Again, when discussing the influence of fecal emanations, the same author remarks:—

"To sum up, the diseases produced by fecal emanations on the general population seem to be diarrhœa, bilious disorders, often with febrile symptoms; dyspepsia, general malaise, and anæmia—all these being affections of digestion or sanguification; typhoid fever is also intimately connected with sewage emanations, either being their direct result, or, more probably, being caused by specific products mixed with the sewage."

These statements do not militate against the position which we have assumed, viz: that no specific disease has been shown to be caused by the gaseous products of putrefaction of animal and vegetable matter. A toxic effect is undoubtedly produced by these gases, but it is necessary to recognize the difference between the action of a *virus* and a *poison*. Mr. Crookes makes some very satisfactory observations on this point.

"No poison yet known to chemists can approach, even in a faint degree, the tremendous energy of the active agent of infectious diseases. A poison may be organic, but it is not organized. It may kill with far greater rapidity than the

virus of infection, but unlike the virus, it cannot multiply itself in the animal economy to such an extent as to endow, within a few hours, every portion of its juices with the power of producing similar results. A virus, on the contrary, renders the liquids of an infected animal as virulent as the original germ. Strychnia may be regarded as the type of a poison, and vaccine matter as the type of a virus."

This difference in the character of virus and poison is fundamental, and if generally regarded, would, as Mr. Crookes suggests, be more convenient, and tend to promote accuracy of thought. The gaseous products of the putrefaction of animal and vegetable matter, must, therefore, be considered as poisons, which, if taken into the organism in sufficient quantity, will produce certain toxic effects, but do not give rise to specific diseases.

A great many conjectures have been hazarded as to the nature and character of the special virus of infection. For a long time the opinions of Liebig have held almost undisputed sway. According to this distinguished chemist, the morbific matter plays the *rôle* of a ferment exciting an action in the body, by contact, correspondent to those catalytic actions to be observed in ordinary putrefaction, and fermentation. In accordance with this view, a large number of epidemic and contagious diseases have been classed together as zymotic diseases. The investigations of Pasteur and Schrœder,[1] have shown that the processes of putrefaction and fermentation are correlative of the growth and multiplication of living organisms, the germs of which are always present in the atmosphere. If the air be deprived of these germs by being filtered through cotton-wool and by passing through tubes heated to redness, no change takes place in the *fermentescible* substance.

These remarkable demonstrations throw new light upon the propagation of disease. Angus Smith assumes that both Liebig's and Pasteur's theories are true, and that "some infections may be wandering about organized, or at least as germs, and others as chemical compounds, with or without definite forms or powers of producing them."

Mr. Crookes observes on the same subject :—

"This chemical theory (Liebig's) at first sight appears very plausible; but it fails to satisfy one necessary condition in the present case. It is possible to imagine that the force set free in the declension of a complex chemical molecule to a more simple form, will be sufficient to raise a neighbouring molecule to a structure almost as complicated as the original; but according to this view the ferment would be constantly diminishing, whereas in reality it constantly increases in bulk. The hypothesis is therefore insufficient to explain the prodigious procreative power of the original particle. This power belongs only to the nature of an organized germ, capable of producing multiples of itself by a process of nutrition and subdivision."

M. Fremy (*Traité de Chimie, etc.*, tome sixième, p. 916) proposes an explanation of the facts observed by M. Pasteur, without the aid of invisible germs. He designates those substances which occupy the middle ground between immediate principles, and organs, under the terms "semi-organized substances," and "organized corpuscles." The semi-organized substances are in general, liquids, but may take form, solidify, group other bodies about them, and really organize themselves, under the influence of a force

[1] An excellent résumé of the views of these *savans* may be found in the elaborate *Traité de Chimie*, par J. Pelouze et E. Fremy. Tome Cinq. Art. *Fermentations*, pp. 203 et seq.

of organization which is a sort of vitality; they then constitute organized corpuscles. These two forms are exemplified in the starch grain, and in the vitelline grain. M. Fremy considers yeast an organized corpuscle, which results from the association of many different organic and inorganic bodies—a solidification of the elements which compose it, under the influence of a soluble semi-organized substance, which is produced in the interior during maturation, or in the interior of the barley grain, in the form of diastase, during the germination of the barley. He sums up his views as follows:—

"1. The seed of yeast is nothing but an organized corpuscle.

"2. This corpuscle is formed as all other corpuscles in the body, by the association of many immediate principles.

"3. This organic association is determined by different influences, but especially by the action of a soluble semi-organized body, which forms itself during the maturation of fruits, or the germination of grains, and also in the interior of the yeast seeds during fermentation. * * *

"4. That which is called germination or gemmation of the yeast plant is nothing but the phenomenon of organic association—an action of an organizing body upon the soluble and organizable elements found in the fermentescible liquor.

"5. Germs of alcoholic ferments do not exist in the air.

"6. The juice of fermentescible fruits do not contain germs of alcoholic yeast: there is found in them only a sort of soluble ferment which determines the union of the organizable elements existing in the liquor which associate themselves together, producing yeast."

These views of M. Fremy are nothing more than an elaborate statement of the doctrines of spontaneous generation. The panspermic theory of M. Pasteur seems to us to be the more reasonable of the two. Can either be applied to explain the nature and mode of action of morbific matters? The presence in the atmosphere of so many invisible germs may serve to explain the occurrence of epidemics; but, unfortunately, the demonstration of the existence of disease producing germs is wanting. If the views of M. Fremy be correct, we must deny the existence of the invisible germs. There are, in truth, no facts, nothing but vague analogies on which to base the zymotic theory. Beale has justly, we think (*Medical Times and Gazette*, August 18, 1866), taken exception to the doctrine. The convenience of the theory and its apparent explanation of a multitude of facts led to its almost universal adoption. But now, fortunately, we believe, for the progress of medical science, investigators have set about a study of the facts themselves, and are no longer content with a plausible explanation of phenomena.

Foremost among these is Dr. Beale. In his report to the Cattle Plague Commissioners, this able observer has, with his usual industry and with a calm and comprehensive judgment, sought to reach the bottom of the subject. He has, it seems to us, more nearly than any one, ascertained the real position, character, and mode of propagation of morbific matter. His views are embodied in the following extracts:[1]—

"The various facts and arguments advanced in this report render it, I think, probable that the materies morbi or contagium of contagious diseases, like pus, is generated in the organism under certain special conditions. Like pus, I think, it has originally descended from the germinal matter of the organism. So virulent is the poison, and such is its power of living under varying conditions,

[1] He has also developed his views in the Physiological Anatomy and Physiology of Man, by Todd, Bowman and Beale, Part I. Also Medical Times and Gazette, Sept. 1865.

that having once sprung into existence, it is almost impossible to extirpate it. If, however, it were possible to destroy all the existing particles of any specific form of contagious germinal matter, it is reasonable to conclude that no new living matter with the same peculiar properties or powers, would be reproduced, unless the very same complex conditions which were present at its origin recurred."

Dr. Beale has defined in various publications what he means by germinal matter. In his edition of *The Physiological Anatomy and Physiology of Man*, p. 11, he has repeated his observations, from which we quote:—

"The simplest or most elementary organic form with which we are acquainted consists of a portion of this soft, transparent, colourless matter, surrounded by a layer of matter formed from it, which may be so thin as to be hardly visible. This latter results, in fact, from the action of external conditions upon the most external portion of the mass. Such an elementary part may be less than the $\frac{1}{100000}$ of an inch in diameter, and may, we believe, exist so small as to be invisible. Still it is a living, and, in a certain sense, independent organism, capable of increase, and endowed with the power of giving rise to other bodies like itself. These wonderful powers, as already stated, reside not in the *formed* matter upon the surface, but in that within, which is in a *formless* but *living* state. The latter may be termed *germinal matter*."

The relation of the germinal matter to morbific matter is expressed in his report to the Cattle Plague Commissioners.

"I have shown that even with the aid of the highest powers of the microscope no differences can be discerned between germinal matter from the cell or elementary parts of the highest organism at any age or period of development, and germinal matter, of which the lowest, simplest being in existence is composed. * * * It will probably strike many as remarkable that the highest magnifying powers hitherto placed at our disposal, serve but to convince us that a minute particle of the germinal matter of the most malignant tumour, or the most rapidly growing pus-corpuscle, resembles in every particular that can be ascertained, a minute particle of healthy, living, germinal matter from the blood or from any tissue, and it is proved beyond a doubt by the same means of inquiry, that the living particles of germinal matter in vaccine lymph cannot be distinguished from those present in normal lymph or chyle."

The differences in properties of the germinal matter in its different situations are referred by Dr. Beale to *differences in power*—a vague term, substituting one difficulty for another. We might attempt to explain the same phenomenon by the use of Fremy's term, "the power of organic association." Whether we can explain the peculiar powers of germinal matter in an aberrant state (morbific matter, materies morbi) or not, the practical fact remains that such matter cannot be distinguished from purely normal germinal material, and that to accomplish its disorganization by chemical means is to destroy its life, and therefore its power of reproduction.

As we have already indicated there are no facts, nothing but analogies, to support the panspermic theory of the propagation of diseases. The researches and demonstrations of Pasteur render it *probable* that our atmosphere contains vast numbers of invisible germs floating in it. In the discussion of the action and uses of disinfectants, it will be convenient to assume the existence of these germs.

MODE OF ACTION OF DISINFECTANTS.—The term disinfection has a much wider application than its etymological signification warrants. As ordinarily employed it includes deodorization and the power to antisept. To disinfect is to destroy morbific or infectious matter; to deodorize is to

destroy offensive gases which may or may not be morbific; to antisept is to prevent or arrest the process of decay. Most of the so-called disinfectants are little more than deodorizers. The true disinfectants are comparatively few in number. Various classifications based upon these differences in properties and powers have been proposed by several of the authors now before us. Chevallier, Parkes, Angus Smith, and Crookes do not suggest specific classifications, but discuss those agents in groups according to some of their properties. Chevallier divides them according to their physical state into gases, solids or liquids, and solids. Dr. Harris proposes to classify disinfectants under four heads:—

"1. Absorbents of moisture and of noxious effluvia; 2. Oxidizers and deoxidizers; 3. Other chemical agents that break up noxious compounds; 4. Agents that form indestructible compounds with putrescent materials; or, that destroy cell-life and the cryptogamic and infusorial organisms."

This classification has been objected to by Herbert Barker on the grounds that the first class are not disinfectants at all, and that the third and fourth classes constitute but one, "inasmuch as chemical agents that either enter into combination so as to form new compounds, or that break up compounds, act, in so far as the process is concerned, in the same way." These criticisms are not well founded, especially as regards the 3d and 4th classes, which are chemically distinct. The 2d and 3d classes should, however, be embraced under one head. Thus Richardson includes all disinfectants under two heads: those which destroy noxious matters by oxidization, and those which arrest action of all kinds. Barker proposes to classify them under three heads; the first two of the classes being identical with those proposed by Richardson; the third being agents that physically restrain the action of the noxious compound, whereby its poisonous properties are neutralized.

The agents employed for disinfection are so numerous, and their actions so diverse, that it is extremely difficult to arrange them under any system of classification yet proposed. Some act by oxidizing, as heat, ozone, chlorine, bromine, iodine; others by deoxidizing, as sulphurous acid; some enter into combination with the noxious matter, as the metallic salts and mineral acids, and others act physically as absorbents, as fresh earth and charcoal. Many of the agents employed as disinfectants act in several modes. Thus chlorine decomposes the compounds of hydrogen with sulphur, carbon, phosphorus, etc., by entering into combination with hydrogen, forming chlorhydric acid. This chemical action is the ground of the efficiency of chlorine as a deodorant, for these hydrogen compounds are the principal offensive gases given off in the process of putrefactive decomposition. But chlorine has a disinfectant as well as deodorant power. It decomposes the vapour of water, and sets free oxygen in its allotropic state, or as ozone. Again, sulphurous acid is a powerful deoxidizer; it abstracts oxygen and passes to the state of sulphuric acid; but in addition to this property it is very destructive to the cryptogamic and infusorial organisms. Further, charcoal and fresh earth promote chemical changes, as well as physically restrain noxious gases. A consideration of these facts renders it evident that any system of classification will be defective. So much uncertainty also exists with regard to the mode of action of many disinfectants that it would be difficult to accurately assign them to classes. In order to present in an intelligible form the conclusions of the authors of the

works before us, we may adopt the classification of Herbert Barker, which is probably as little objectionable as any other:—

1. Agents that chemically destroy the noxious body.
2. Agents that hold the noxious body inactive (antiseptics) by arresting chemical change.
3. Agents that physically restrain the action of the noxious compound, whereby its poisonous properties are neutralized.

If we had any positive knowledge of the special virus of disease (morbid germinal matter, or cryptogamic or infusorial organisms), the so-called disinfectants might with great propriety be arranged in the following classes: deodorants, antiseptics or colytics,[1] and disinfectants proper.

APPLICATION OF DISINFECTANTS. I. *Agents that chemically destroy the noxious body* may be employed against gases, liquids, or solids. The leading agent of this class is heat, which acts, of course, by oxidation. Dr. Henry, F. R. S., of Manchester, proposed, in 1832, the application of heat as a disinfectant. He showed that the virus of scarlet fever and of plague contained in clothing could be thoroughly destroyed, so that they no longer possessed any infectious property, by exposure to a temperature of 212° F. Dr. Harris' very interesting monogram contains a *résumé* of Dr. Henry's experiments, and various observations made by himself, showing the great value of heat in the destruction of the special virus of disease. Barker embodies his conclusions in the following language: "When organic matters in the solid state are deposited in clothing, the exposure of the infected articles to great heat, as to steam or boiling water, is the readiest, the easiest, and the most effective method." Dr. Harris relates that Dr. Von Busch, of Berlin, eradicated the virus of puerperal fever, which obstinately adhered to the wards of the Berlin Lying-in Hospital, by elevating the temperature to 167° F. by means of common stoves. This remarkable experiment proves the utility of heat as applied through the air. Sufficient attention is not paid to the use of heat in destroying morbific matters. Hot air, steam, and boiling water may be employed whenever the circumstances admit. Hot air and steam can be used in rooms, houses, and hospital wards very readily, and boiling water is a convenient agent for destroying the virus adherent to clothing, and other fomites. The necessary temperature to accomplish these objects is not definitely ascertained. Dr. Henry concludes that as the infectious matter of cow-pox is rendered inert by a temperature not below 140° F., more active contagions are probably destructible at temperatures not exceeding 212° F. As the cryptogamic and infusorial organisms may play the *rôle* of infections, it is important to ascertain at what temperature they may be rendered inactive or be destroyed. Berkeley states, in his *Outlines of British Fungology* (p. 32), that the spores of certain fungi will bear a moist heat equal to that of boiling water without losing their power of germination. It may be safely asserted, as a general rule, that these organisms are not destroyed by a less temperature than that sufficient to effect their complete disorganization. Various experiments demonstrate this. Pasteur has shown, by repeated observations, that these organisms will not become developed in solutions raised to the boiling point, and then hermetically sealed. On the other hand, Prof. Jeffries

[1] The term *colytic* was introduced by Angus Smith "to express that quality, whatever it may be, by which the evident inclination to move is arrested." Derived from κωλύω, *I restrain*.

Wyman, of Cambridge, has recently apparently demonstrated that these organisms are developed even after all the precautions insisted upon by Pasteur have been adopted; but Prof. Wyman is, we believe, an advocate of the doctrine of spontaneous generation. It was ascertained by Dr. Henry that woollen and cotton fabrics could be exposed to a dry temperature of 220° F. without injury. There can be no doubt that this temperature would effect the chemical decomposition of most morbific matters, and even of the spores of disease-producing fungi.

Next to a high temperature, chlorine is considered by some of our authors as one of the best disinfectants. According to Herbert Barker, "for rapid deodorization and disinfection, chlorine is the most effective agent known." This conclusion was reached after numerous comparative experiments. Chevallier also places chlorine in the front rank. It is questionable whether it is deserving of the high eulogiums passed upon it. As a *deodorant* there can be no doubt of its efficacy, for it breaks up the odorous gases (hydrogen compounds) developed in putrefaction, but it does not appear to be equally effectual against the special virus of disease. Thus Dr. J. P. Loines[1] concludes, as the result of some carefully conducted experiments, that chlorine, in quantity sufficient to be irrespirable, does not destroy the infectious property of vaccine virus. Mr. Crookes has performed an experiment showing that chlorine acts first upon the gaseous products of decomposition, and that if virus or spores of fungi are to be reached, large quantities of this agent must be used. Beside the unpleasant odour of chlorine, and its irritant action upon the respiratory organs, there are other objections to its use. Thus, when liberated in rooms the walls of which are whitewashed, it enters into combination with the lime forming the deliquescent chloride of calcium. Dr. Squibb loses sight of this fact in his warm advocacy of lime-wash and chlorine fumigations.

There are various methods of generating chlorine for deodorization and disinfection. The most common is the use of chloride of lime, from which the chlorine is given off slowly, but more rapidly on the addition of an acid. As ordinarily employed it is very objectionable. It changes, as we have seen, into the deliquescent chloride of calcium, and keeps the place to which it is applied permanently damp. Chlorine can be readily obtained from chlor-hydric acid, which contains 97 per cent. of this gas, by heating it gently with peroxide of manganese; or it may be obtained by treating a mixture of peroxide of manganese and chloride of sodium with sulphuric acid. Such preparations are made on a large scale, and put up in a convenient form by manufacturers for this purpose. To regulate the supply of chlorine in the sick-chamber, Herbert Barker proposes to distribute it from half-ounce vials, at as great a distance as possible from the patient. Such a method of evolving chlorine is by no means so objectionable as sprinkling the floor of the apartment with chloride of lime, and is more efficient than suspending cloths moistened with a solution of chlorine or chloride of lime.

Ozone, as is well known, is active oxygen, and is a more powerful oxidizer than common oxygen. It attacks organic matter with great energy, but, like chlorine, its energies are expended in destroying odorous gases; the special virus or morbific matter is last of all acted upon. For disinfection of air, according to Herbert Barker, "for steady and continuous effect, ozone is the best agent known." There can be no question

[1] Medical Record, March 15, 1866.

that for the deodorization and disinfection of the sick-room or hospital ward, it is the most elegant and convenient, and also effectual agent, consistent with the comfort and safety of the patient, which can be employed for this purpose. During the last cholera epidemic we employed it with great advantage in the wards of a cholera hospital. There are certain objections to its employment in all cases. Thus, ozone has an undoubted power of inducing coryza and bronchitis, and, according to Richardson, congestion of the lungs and pneumonia may be developed in rabbits by causing them to breathe an atmosphere highly charged with it.

The method of employing ozone for the disinfection of air, is simple enough. Some sticks of freshly-scraped phosphorus may be placed in a saucer, and partly covered with distilled water. The sticks of phosphorus may be more or less covered with water, to regulate the rate of oxidation; and therefore the production of ozone. Dr. Barker has figured a convenient apparatus for regulating the supply of ozone in the sick-chamber, but the simple arrangement of which we have spoken is very convenient for the purpose, and quite as effectual as a more costly and complicated apparatus. It has been objected to this method of generating ozone that the fumes of phosphoric acid which escape are hurtful to the sick. Herbert Barker disposes of this objection by saying that "experience supplies no evidence of mischief or danger from this cause." This accords with my own observation. If, however, the small quantity of phosphoric acid may, from any cause, prove objectionable, the ozone may be obtained by another process, by moistening powdered permanganate of potassa with sulphuric acid.

Ozone may be applied to the disinfection of solids and liquids in the form of *ozonides*, of which the most important are permanganate of potassa and peroxide of hydrogen. The former has grown into important medical and surgical uses and applications; it contains oxygen as ozone, to which its extraordinary deodorant and disinfectant power is due. The peroxide of hydrogen is equally effectual and for some purposes more desirable. Thus for the destruction of organic matter in water, it is preferable to the permanganate of potassa, because it imparts neither taste nor colour to the water. The objections to its use is its cost. "Whoever cheapens it," says Angus Smith, "will do good to society."

The action of the ozonides does not continue long. When added to decomposing liquids and solids, they destroy odour and oxidize the organic matter very satisfactorily; but after awhile the effect ceases and the process of putrefaction is resumed. Some experiments by Barker show this conclusively. "Solution of peroxide of hydrogen was good for sixteen days, then decomposition commenced and went on with great rapidity to complete disorganization. Permanganate of potash (Condy's fluid) was bad, decomposition commencing in it on the sixth day."

Bromine and iodine act in a very similar manner to chlorine. The chemical relationship between chlorine and bromine is especially strong. Bromine decomposes the gaseous compounds of hydrogen evolved in the process of putrefactive decomposition, and also combines with the hydrogen of the vapour of water, setting free oxygen in its allotropic state. Bromine is next to chlorine in efficiency in the disinfection of air, and is superior to chlorine in the disinfection of solids and liquids. It is superior to chlorine, also, in the convenience and simplicity of its application: it is only necessary to remove the stopper from the bottle containing it when the vapour, notwithstanding its density, will rapidly combine by diffusion with the air. There

are, however, various objections to bromine; it is expensive, its vapour is irritating to the bronchial mucous membrane, and the liquid is corrosive, producing an unhealthy ulceration of those parts of the body with which it comes in contact.

Iodine possesses a power of deodorization and disinfection hardly to be anticipated from its chemical actions. Its affinity for the gaseous compounds of the putrefactive process, and for the hydrogen of the vapour of water, is much less than that of chlorine and bromine; yet, in some respects, it is preferable to either. Herbert Barker has concluded, as the result of a variety of experiments, that "in the absence of ozone, iodine, exposed in the solid form to the air, is the best;" and that "for the deodorization and disinfection of fluid and semi-fluid substances undergoing decomposition, iodine is best." In addition to its usefulness and effectiveness, iodine has the merit of being easily applied to the disinfection of both gases, and solids and liquids. There are several methods of applying it; the crystals may be simply exposed to the air in a common saucer, or the tincture may be exposed in the same way; in this case the effect is gradual and sustained. When prompter effects are desired the crystals may be vapourized by heating on a plate; the vapour is distributed through the air and the iodine is deposited in a finely-divided state on all objects in the apartment, thus keeping up the effect for a considerable period.

Theoretically nothing can be more perfect than the action of the oxidizing disinfectants which we have just considered upon noxious organic matter; but their practical utility comes far short of this. Experiments and observation show that before specific virus or septic germs are attacked, the hydrogen compounds must be destroyed; for if these products continue to be evolved the oxidizing powers of the disinfectant will be consumed before the specific virus or septic germ can be reached. All odorous substances may disappear, be broken up by oxidation, and yet the septic germs remain untouched and possessed of their morbific power. Mr. Crookes has well observed that "oxidizing disinfectants possess little, if any, continuous action. What they attack is destroyed perfectly, but what they leave has no special resistance to decomposition conferred upon it. They remove the products of decomposition, but they do not take away the power of further putrefaction.

The mineral acids and the metallic salts, employed as disinfectants, belong to the first class. Nitrous and sulphurous acids are, more properly, colytic, and will be alluded to in connection with that class. Nitric and sulphuric acid, the nitrates and sulphates, are oxidixing disinfectants; the chlorides of zinc, iron, and mercury form, with organic matter, combinations which resist change. In Chevallier's treatise (p. 132) there is a list of substances proposed as disinfectants from 1762 to 1846, amongst which we find no less than thirty acids and metallic salts; but a portion of these have stood the test of experience. We propose to examine those of most practical importance. It is obvious that disinfectants in the liquid and solid form, non-volatile, can be applied only to the disinfection of liquids and solids. We may reject, at once, the mineral acids as practically unavailable, unless employed merely to disengage gaseous disinfectants. The nitrate of lead, the sulphates of zinc, copper, and iron, and the chlorides of zinc, iron, sodium, and manganese, are the chief metallic disinfectants. These vary chiefly in price, rather than in efficiency. The nitrate of lead is the base of Ledoyen's liquid, the use of which in the Paris hospitals, according to Chevallier, was very satisfactory, but not sufficiently so to establish its

pre-eminence over the salts of iron and zinc. One of the most useful in respect to efficiency, and economical in respect to price, is the sulphate of iron, and hence it may be largely employed to disinfect sewers, privy vaults, and indeed all forms of decomposing organic matter. An objection to its use, which has prevented its employment in Paris for disinfecting the gutters, is its power of colouring black the substances upon which it acts (Chevallier), and hence the more costly, if not more efficient, sulphate of zinc is employed for disinfection of noxious matters exposed to public view. It may be useful to state that the sulphate of iron dissolves in its own weight of cold water, and that three pounds have been ascertained to be sufficient to disinfect or deodorize fifty gallons of fecal matters. Some well conducted comparative experiments are wanting to show the relative value of the sulphates of iron and zinc. It appears that the mixed sulphates, of iron and copper, and of zinc and copper, are more effectual than either acting alone. The mixed salts of zinc and copper, dissolved in water, constitute the *antimephitic liquid* of M. Larnaudès; the proportions of the several ingredients in 1000 parts are as follows: water 975, sulphate of zinc 23, and sulphate of copper 2. This liquid was found to have an advantage over a similar solution of sulphate of iron. We find some interesting comparative experiments as to the value of the sulphate and chloride of zinc, in Herbert Barker's Hastings Prize Essay. His conclusions are stated as follows: "For the deodorization of putrescent organic matter, as well as for the preservation of fresh matter, chloride and sulphate of zinc are by far the best agents." As the result of another set of experiments he observes, "Practically there is no difference between the two salts." This is a fact of considerable importance, since the chloride of zinc is a much more expensive salt than the sulphate. The chlorides of zinc, iron, manganese, and sodium, have a comparative power of disinfection in the order in which we have just named them.

There is another agent belonging to this class whose properties have not yet been discussed—quicklime. This combined with charcoal ("calx powder") is strongly recommended by Squibb, evidently, however, on theoretical grounds. Lime is an absorbent of moisture, is destructive to organized germs, and combines with the gaseous products of putrefactive decomposition. Some experiments of Barker, which we have repeated, show that lime can hardly be considered a deodorizer at all, and that it causes a rapid evolution of ammoniacal gas, when used to disinfect putrefying organic matter. As the results of practical observation have much greater value than any theoretical view, we are compelled to assign lime to a comparatively low position in the list of disinfectants of the first class.

II. *Agents that hold the noxious body inactive by arresting chemical change.*—There are important differences between the agents of this and the preceding class. The latter attack those odorous gases developed by putrefaction, and last of all—if they possess the power—oxidize and destroy the special virus of disease. If *materies morbi* consist of dead organic matter declining in complexity of chemical constitution, then the action of oxidizing disinfectants might prove sufficient. This view of the character and actions of *materies morbi* is taught, it will be remembered, by Liebig and his school, who have given origin to the zymotic theory of disease. Angus Smith uses his term, colytic, in a sense antagonistic to catalytic; in other words, colytics, restrain or prevent that tendency *to move* characteristic of catalysis. Whilst some of the agents of this class may be merely

colytic, others of them manifest properties much more important than a mere power to arrest catalytic changes. There are many reasons for believing, as we have already shown, that *materies morbi* is not dead organic matter, but living matter capable of growth and multiplication, whether existing as an organism or not. Further, it appears probable that germs exist in the atmosphere, capable of growth and development when the necessary conditions are presented to them.

The agents of this class do not all act in the same manner, and hence, in their applications, they should be selected with reference to their peculiar properties. Many of the antiseptics attack with energy the *materies morbi* —the living organisms—without at all deodorizing; some act as deodorizers as well as colytics, and some appear to act chemically by abstracting oxygen and thus preventing change or decomposition.

Sulphurous acid is one of the most ancient of disinfectants. Several of the authors before us quote the lines in Homer's *Odyssey*[1] referring to the use of burning sulphur by Ulysses as a fumigating agent; and also the reference in Ovid's *Fasti* to the use of the same substance for purifying sheep. Several investigators have, within a recent period, ascribed extraordinary powers to sulphurous acid. Observing the action of this agent in arresting fermentation, Dr. Polli was led to propose the use of the sulphites in zymotic diseases, or as Dr. De Ricci prefers to style them, catalytic diseases. The extraordinary confidence at once unhesitatingly given to these statements of Dr. Polli is certainly marvellous. In the first place, it is a pure assumption that the class of diseases known as zymotic are propagated by a peculiar ferment. In the next place, admitting this assumption to be true, it is obvious that the sulphurous acid could not alter those changes induced in the solids and fluids by the ferment, and that, to be of use, it should be administered as a prophylactic, or at least before the phenomena of the disease declare themselves. Lastly, the tendency of sulphurous acid to pass to sulphuric, and the absence of any proof (except the statements of Dr. Polli) that sulphurous acid passes through the organism unchanged, renders it probable that the conversion into sulphuric really takes place. It is in the prevention of disease, then, rather than in the cure of it we may hope to use sulphurous acid with advantage. Dr. Dewar was fortunate in the application of it to arrest the spread of the cattle plague. Pleased with his success, he has sought to extend the use of his remedy to a large number of diseases to which it has no applicability; amongst others to phthisis, and in order to account for its curing his coachman of consumption he has invented a cryptogamic theory of that disease. He reasons thus: As sulphurous acid is very destructive of the cryptogams, and as it cures phthisis, *ergo*, phthisis must be caused by a cryptogamic parasite. Mr. Crookes speaks in terms of commendation of sulphurous acid as a disinfectant in cattle plague, thus confirming the statements of Dr. Dewar. Angus Smith also eulogizes its properties on chemical grounds. The sulphite of lime mixed with carbolic acid constitutes the efficient and well-known McDougall's disinfectant. The evidence now accumulated renders it certain that sulphurous acid is one of the best of all the agents proposed for disinfection. It is inexpensive, easily applied (by the combustion of sulphur), and may be inhaled in considerable

[1] Bring brimstone, the relief of evils, and fire, that I may fumigate the house. * * * Ulysses well fumigated the house, and the court, and the hall.—*Od.* XXII. 481.

quantity without injury. There are some objections to its use. Thus, it bleaches clothing, and meeting in the interstices of the cloth the vapour of water, is converted into sulphuric acid which rots the fabric. The affinity for moisture renders the use of sulphurous acid gas, for the destruction of organic germs, more effectual than it would otherwise be, for these germs, as is well known, adhere to particles of moisture and develop most abundantly in damp situations. Mr. Crookes has published some interesting and conclusive experiments showing the power of sulphurous acid to destroy the vitality of germs. Angus Smith narrates some experiments demonstrating its extraordinary antiseptic power as shown in the preservation of fresh meat. Dr. Dewar has also experimented largely with it as an antiseptic, and has preserved meat which was afterwards eaten with great satisfaction. Indeed, there can be no question as to the colytic power of sulphurous acid, or the power to destroy germs. In addition to these important properties, it is a deodorizer of no inconsiderable value, in which respect it possesses advantages over most of the other agents of this class. In the disinfection of unoccupied rooms, hospital wards, or houses, it is preferable to chlorine; whilst the latter forms by combination with the lime of the whitewash deliquescent chloride of lime, the former unites with the lime to form the dry sulphite of lime, which continues the effect for some time after the fumigation.

It thus appears that sulphurous acid answers all the requirements of a disinfectant and deodorizer, more completely than any agent thus far considered.

The very able report of Mr. Crookes is chiefly taken up with an examination into the mode of action and uses of carbolic and cresylic acids. He presents some very striking facts. Angus Smith has also experimented largely with these agents, and has formed conclusions highly favourable to their usefulness.

Carbolic and cresylic acids (creasote) are not truly acids, and are assigned by most chemists of repute to the alcohol series. Acidity, however, is a prominent feature. Creasote prepared from coal-tar, consists of a mixture of the two acids, but according to Hlasiwetz (Crookes), creasote prepared from wood tar is a different substance.

The antiseptic power of wood tar and coal tar compounds has been known from a remote period; the latter having been the influential ingredient in the materials used in the ancient process of embalming. The power of wood smoke to preserve meat from decay is familiar to every one. Dr. Squibb proposes to utilize this practical fact; he recommends that tenement houses before being thoroughly whitewashed, be fumigated by the smoke of a wood fire burning in the cellar. This would hardly be as effectual as the application of whitewash followed by thorough fumigation with burning sulphur. A citizen of Cincinnati, without being informed as to what has been accomplished abroad, has made a compound of sawdust, coal tar compounds, and sulphur, which he proposes to burn in a shut iron stove having a perforated cover. This is the same in principle and in respect to results as the McDougall disinfectant, which consists of carbolic acid and sulphite of lime. As carbolic acid and the coal tar compounds are not deodorant, but merely substitute one bad odour for another, it is very desirable to combine sulphurous acid with them. That carbolic acid is not deodorant is evident enough from the experiments of Angus Smith and Crookes. The latter observes, "Carbolic acid has scarcely any action on fetid gases; but it attacks the cause which produces them, and,

at the same time, puts the organic matters in such a state that it never re-acquires its tendency to putrefy."

Mr. Crookes has made a number of elaborate experiments to determine the mode of action of carbolic and cresylic acids. In the first place he demonstrates that these acids preserve meat perfectly; one per cent. of an aqueous solution of carbolic acid preserved a piece of meat for ten weeks, at the end of which time it was stewed and eaten with condiments, and could not be distinguished from fresh meat except by a faint flavour of carbolic acid. Angus Smith shows that of the two acids, the cresylic is a rather better preservative of fresh meat than carbolic. Mr. Crookes next demonstrates that these antiseptics do not owe their efficiency to their power of coagulating albumen. He ascertained that one per cent. of carbolic acid destroyed the power of yeast cells to induce fermentation, and this result was accomplished without making any alteration in these cells, which could be detected by the microscope. Carbolic acid, he next determines, does not prevent diastase converting starch into dextrine, and he therefore concludes that "it has no action on purely chemical ferments," but that "it acts by attacking vitality in some mysterious way." The last of this series of experiments determined the destructive effect of carbolic acid upon the minute organisms which accompany the process of putrefactive fermentation. He sums up the results of his very interesting and conclusive experiments and observations in the following language:—

"The powerful action which carbolic acids exerts on the phenomena of life, is the most remarkable property which it possesses. It may be looked upon as the test proper for distinguishing vital from purely physical phenomena, and in most cases its action is characterized by the certainty and definiteness of a chemical re-agent. In the presence of carbolic acid the development of embryotic life is impossible, and before its powerful influence, all minute forms of animal life must inevitably perish."

For the information of those not familiar with the appearance and properties of carbolic and cresylic acids, we subjoin some remarks upon their chemical and physical characters.

Pure carbolic acid is a white crystalline solid which melts at 93° F. Cresylic acid is a liquid which boils at 400° F. Carbolic acid as obtained in the shops is usually in the liquid form, owing to the presence of water and some oily impurity. The common commercial carbolic acid contains cresylic also, to which fact the liquid state of the preparation is sometimes due, but for purposes of disinfection this could not be considered an adulteration, since cresylic acid is quite as effectual as carbolic. The preparation sold as carbolic acid would necessarily be much less valuable if its liquid state were due to the presence of water. "Commercial carbolic acid is soluble in from 20 to 70 parts of water." In actual practice a solution of carbolic acid may be applied to walls, floors, clothing, and the air saturated, as far as may be done, by suspending in it cloths moistened with the same solution. In Mr. Crookes' very striking clinical experiments upon cattle plague, fumigations of sulphurous acid were combined with the use of carbolic acid in the manner above indicated. His success during this very destructive pestilence in preventing attacks of exposed animals by destroying the septic germs, affords us great encouragement to apply the same measures for the arrest of similar human epidemics. Surely, it is much more rational to employ those agents as disinfectants which attack the living germs, the special virus, the *materies morbi*, rather than those which expend their activity upon noxious gases merely.

III. *Agents that physically restrain the action of the noxious compound, whereby its poisonous properties are neutralized.*—These are neither numerous nor important. Charcoal, wood-ashes, fresh earth-mould, lime and fine coal-dust, are the chief substances of this class. Various finely divided substances have considerable power of absorbing gases, and of promoting chemical changes, but their action is chiefly a physical one—adhesion of the gases to the solid. This power is possessed in great perfection by charcoal, which absorbs large quantities of gaseous matters. This consideration has led Dr. Squibb into rather extravagant laudation, as we believe, of his favourite compound (calx powder). We find in Herbert Barker's essay some experimental demonstrations well calculated to cool the zeal of the advocates of Squibb's compound. We are convinced of the general accuracy of Dr. Barker's statements by some observations of our own. It will suffice to state the conclusions of the author of the "Hastings Prize Essay" without wearying the reader with an account of the experiments in detail.

"With regard to the above series we learn, as the experiments in the first series have already indicated, that charcoal used quite fresh possesses a very limited deodorizing power in comparison with other substances. * * * I afterwards, on June 23d, in order to be quite satisfied, placed two pounds of intestine in roughly powdered charcoal, and another two pounds in powdered charcoal, changing it every day. The result was that decomposition proceeded without interruption, and the intestines were very offensive on the fourth day."

Dr. Barker thus states the results of another series of experiments.

"This series of experiments also shows that fresh earth mould possesses rather less power as a deodorizer than charcoal. It further indicates that wood-ashes possesses a very decided deodorizing property, being in fact but little inferior to carbolic acid. Lastly, for some days, saw-dust alone acts exceedingly well; but putrefaction when it once commences in saw-dust is developed with great rapidity."

In the absence of more effective agents it would certainly be proper to use the articles of this class; but it should be remembered that they only hold inactive and do not destroy, the noxious matters.

The report of the Metropolitan Board, which we have received since writing the above, shows how much may be accomplished by an intelligent and diligent use of disinfectants, in preventing the spread of a cholera epidemic. We are, therefore, glad to avail ourself of the important results achieved, in illustration of the principles of disinfection as set forth in the preceding pages.

The New York Board of Health have reduced the practice of disinfection to a system. They established a "Disinfectant Depot and Laboratory," where the preparation of disinfectants and experiments upon their uses were carried on under competent direction. The depot was provided with trained men and horses and wagons. Whenever a case of cholera appeared in an infected district, the disinfectants were quickly dispatched to that point, and applied in the most thorough manner.

"The process of disinfection," according to Dr. E. B. Dalton, sanitary superintendent, "consisted in putting sulphate of iron either in saturated solution, or dry if used in wet places, in privies, in all vessels containing dejections from the bowels, and in all places where such dejections had been deposited. * * * All bedding and clothing soiled or used by the patient was boiled in a solution of permanganate of potassa, of the strength of one ounce to five gallons of water for two hours, and then removed and reboiled in pure water. For purifying the

atmosphere of the room without incommoding the patient, chlorine was gradually set free by adding sulphuric acid to a mixture of binoxide of manganese and chloride of sodium."

"The plan of disinfection, already described, has given entire satisfaction, as regards the dejections, clothing, and other immediate surroundings of the patient, but frequently the recurrence of successive cases in tenement houses, showed that the power of such cases was too limited, and at an early date general fumigation of such buildings was resorted to, either with chlorine or sulphuric acid gas. The process was this: All tenants were removed from the house, being allowed to take out nothing more than the clothing then upon them. All the windows and chimneys were closed. The gas was then set free in quantity—if chlorine, by the addition of sulphuric acid to chloride of lime; if sulphurous acid, by the burning of sulphur in large open pans, supported by long iron legs. The men employed commenced the process on the upper floors, and descended, leaving the pans in operation on the different floors, and finally closed the street door—the house thus filled with gas was left undisturbed for from eight to twelve hours. It was then opened, freely aired, and the tenants allowed to re-occupy. The first house treated in this manner was an emigrant hotel, in the lower part of State Street. Three cases of cholera occurred in this house within a period of thirty-six hours, and a large number of the boarders were attacked about the same time with diarrhœa. The proprietors were notified that all guests must leave and the hotel be closed. This was promptly done. The house was then thoroughly fumigated with chlorine, and kept so for twenty-four hours, when it was opened and aired. It was then cleansed throughout and the walls fresh whitewashed. At the end of ten days the hotel was re-opened and very soon crowded with lodgers. No case of cholera or other disease of any moment has occurred there since. Subsequently to that, a large number of houses were fumigated, after cholera had occurred in them. Sometimes chlorine was the agent, and at others sulphurous acid. They have proven equally satisfactory, though in far the largest number the latter was used. In the great majority of instances, fumigation has been followed by immunity from the disease. In a few, however, cases have occurred subsequently to the process, but they have seemed the result of renewed exciting causes." (p. 22, Appendix.)

The facts which we have presented in this review, and the numerous striking instances of the power of disinfectants, contained in the works before us, but which would have occupied too much space to detail, are conclusive as to the value of these agents in the prevention of disease. Notwithstanding this, it must also be admitted, that our knowledge of the practice of disinfection is yet incomplete in many respects, but chiefly, in respect to the power of these agents to destroy septic germs. It is very desirable that this important branch of the subject be pursued by those competent to conduct such investigations. A field of research, vast in extent, is here open to those willing and able to cultivate it, and discoverers in it will be considered benefactors of their race. It is vastly more important, as we all know, to be able to prevent disease than to cure it. He who teaches us to prevent an epidemic or contagious disease by disinfectants deserves to rank with JENNER, in the estimation of mankind.

R. B.

ART. XVII.—*Clinique Médicale sur les Maladies des Femmes.* Par M. GUSTAVE BERNUTZ, Médecin de la Pitié; et M. ERNEST GOUPIL, Médecin de l'Hôpital de Lourcine. Tome premier. Paris, 1860; tome deuxième, 1862.

Clinical Memoirs upon Diseases of Women. By M. GUSTAVE BERNUTZ, and M. ERNEST GOUPIL. Vol. I. pp. 610; vol. II. pp. 771.

The same translated and edited by ALFRED MEADOWS, M. D. New Sydenham Society, London, 1866. Vol. I. pp. 276; Vol. II. pp.

IN the year 1816, Recamier revived the use of the *uterine speculum*—(*revived* such use, for without delaying to consult the evidence of Ambrose Paré and of Scultetus, the ruins of Pompeii and the records of Galen seem to establish a high antiquity for this instrument)—and the succeeding half century has been marked by extraordinary progress in uterine pathology and therepeutics. This truth may be admitted with equal readiness whether with the *Ultraists* we see in the speculum the great cause of such progress; or, with the *Citraists*, regard it only as having stimulated investigation, contributing but little to the facility and value of such study; or, to present a final contingency, we consider this acknowledged progress as simply an advance *pari passu* with other departments of medicine, and resulting from the concurrent influences of various causes.

The literature of diseases of women now constitutes no meagre library of occasional and isolated volumes; each year brings an increase in number and variety of contributions, and he who would be familiar with them all must be a most industrious and constant student.

But were a statement required as to what these numerous volumes "principally teach," what uniformity of pathological creed and therapeutical practice their authors hold, one is almost tempted at times to exclaim, *Quot homines, tot sententiæ!* He is fortunate who, in the midst of voices often discordant, and of testimonies frequently contradictory, preserves an intelligent faith in a few fundamental truths already known, and many more awaiting discovery; otherwise, from his hasty credulity, he may lapse into utter scepticism, for these, while *opposites*, are at the same time *proximates*, just as the license of civil anarchy is but the prelude to the stern rigor of despotism.

Uniformity of opinion is the calm of utter stagnation, or else the tribute to a completed science; men agree either when they do not think at all, or else when conjecture and speculative reason are lost in positive knowledge. Gynæcology is neither a stagnant pool nor a finished edifice; that which has been accomplished is in itself great, but in comparison with that which remains to be done, is exceedingly small. While then the Pillars of Hercules are yet a great way off, so far that neither this nor any succeeding generation of mortals can reasonably hope to behold them, there must be differences of opinion among the pioneers who endeavour to map the way which leads thither.

Illustrations of these diversities and contrarieties of opinion can be readily found. * * * Nevertheless, notwithstanding the ceaseless flow and ebb of different pathological views, and the clashing of opposite and discordant opinions, there is a constant current whose force bears us on to a larger and clearer knowledge of female diseases—a current flowing, not from a single source, but from many fountains, and a force which is the resultant of many forces. The day has gone by when any exclusive and

ultra creed can reign supreme in this domain. The extravagant laudations, for example, of the uterine speculum by its enthusiastic friends which we heard a few years ago are hushed alike with the fierce denunciations of those hostile to its use; we well know that the field of uterine pathology embraces a vastly larger area than a Fergusson's speculum can inclose, and equally well we know the value of this instrument in the diagnosis and treatment of a limited number of diseases peculiar to women.[1] Guerin has some excellent observations in reference to the undue importance which has been attached to this instrument, and to lesions of the uterine neck—observations as it seems to us of such value, that a few of them we transcribe, furnishing alike the proof, the cause, and the correction of an error into which some practitioners not unseldom have fallen; and the views of this eminent teacher will be found to correspond quite well with those of MM. Bernutz and Goupil, upon the consideration of whose volumes we shall enter in a moment.

"As the human mind has a great tendency to assign effects to causes which it can readily appreciate, the pains which women so frequently experience in their loins and abdomen have generally been attributed to a lesion of the uterine neck. Although metritis and phlegmons of the large ligaments may not be unknown by all the world, it is, in the vast majority of cases, ulceration of the neck which is invoked to explain the sufferings of women.

"This ulceration answers to all: pains of the stomach, of the kidneys, dyspepsia, hysteria, nervous affections of all sorts—everything is explained by an excoriation of the uterine neck. After having examined many thousands of women, I think myself right in affirming—

"First. That these ulcerations cannot cause the pains which have been attributed to them.

Second. That these pains are caused, in a very large majority of cases, by phlegmonous inflammation of the large ligament, by an ovaritis, a pelvi-peritonitis, or by a hæmatocele; or, finally, by an intestinal lesion to which the physician gives no farther thought when he has discovered an ulceration, however slight, of the neck. * * *

"Since the invention of the speculum it has been thought that this instrument would permit the physician to dispense with every other method of exploration, an opinion which is almost certain to lead into error. What indeed can we discover with the speculum? The mucous membrane of the vagina and the neck of the womb. We can distinguish the color of these parts, ascertain the volume of the neck and the ulceration of which it may be the seat. But if a vaginitis cannot escape this investigation, it is quite evident that we are but little advanced towards the diagnosis of diseases of the womb when we have discovered that the os is larger than normal, and that it is red and ulcerated.

"Except in case of a cancerous ulceration, I do not think that one can by means of the speculum give a positive opinion as to the cause of the pain for which he is generally consulted. The touch is, in my opinion, an infinitely more valuable means of diagnosis."

Addressing ourselves now to the work of MM. Bernutz and Goupil, we find that the former is the chief author, but little more than one-fourth of the thirteen hundred pages which the two volumes contain being the labour of the latter. Goupil died in September, 1864, and his early death was no small loss to medical science. Bernutz is in the prime of manhood, and his contributions to the *Nouveau Dictionnaire de Médecine et de Chirurgie Pratiques*, of which the sixth volume has just been issued, are exceedingly valuable; and we venture the assertion that these Clinical Memoirs

[1] Maladies des Organes Genitaux Externes de la Femme. Paris, 1864.

constitute the most important advance made in gynæcology within a score of years.

The introduction, which is by Bernutz, indicates very fully the scope of the work, methods of study, &c. It is not designed to be a dogmatic treatise upon female diseases; such a work with our present knowledge seemed to the author impossible.

"I thought it necessary to study clinically each of the functional diseases of the genital organs in order to know their different causes, and to deduce from actual observation their symptomatology. I was then young, and did not consider the innumerable difficulties which would occur at each step, and which to-day, after so many years of labour, compel me to avow that I am far from being able to describe all the diseases of women, and that no one else can."

M. Bernutz refers to his long-continued and constant labour, assisted by friends and pupils, and especially by M. Goupil, first his *interne*, and then during two consecutive years engaged with him at the Hôpital Lourcine, a labour that taught him how little he knew in comparison with that remaining to be studied, or knew but too superficially to be able to present in a satisfactory manner.

We may well pause a moment at these frank avowals of such partial knowledge; for surely there might be found scores of men who would scarce confess even to themselves attainments so imperfect, and who would not be balked in their ambitious projects by similar reflections!

To "get up" a complete work on *Female Diseases* is quite on a level with moderate abilities—only some patience of industry and skill of art required; taking a fragment from this, and another from that author, hence a stone and thence another—fitting and fastening them together by paragraphs and by chapters, and the occasional introduction of the conscious "I," and some original barbarisms of nomenclature—and lo! the curious mosaic is done.

In these volumes, however, we have embodied the intelligent and industrious labour of many years, executed too with all the facilities for insuring its success and completeness, and after all but a portion of female maladies is discussed.

But without dwelling longer on this point, we proceed to mention the subjects treated of, and their order.

"In a work of this kind it seemed to me necessary to commence by the study of that functional trouble which is comparatively the simplest of all, to wit, disturbance of menstrual *excretion*,[1] and this selection was confirmed because it

[1] "I may perhaps be allowed to explain the meaning which the authors attach to the terms 'secretion' and 'excretion,' as they are frequently used in these pages, and scarcely in the way we are accustomed to in this country. With us they are sometimes used synonymously; the urine, for instance, is at one time a secretion, and at another an excretion. Generally we call that an excretion the separation of which from the blood is essential to the maintenance of life, while those products which are separated for some ulterior purpose, as milk, saliva, etc., are called secretions. Not so, MM. Bernutz, and Goupil: in reference to menstruation, the product itself, they designate by neither term; the act of separation from the uterine glands and vessels they call the menstrual secretion, and its further escape from the uterine and vaginal canals, they term the menstrual excretion. So that in both cases it is not the product, but the escape of that product that is called after these terms."—*Extract from Dr. Meadows' Preface.*

Now this is all very well except the implication that such use of the terms "secretion" and "excretion" is peculiar to the authors. That it is not thus peculiar, the following extract from the second volume of the *Bibliothèque du Médecin-Prac-*

furnished us a point of departure a typical morbid tableau accepted as true by all pathologists."—*Introduction.*

Consequent upon failure of menstrual excretion, *hæmatocele* may occur; hence this is the next subject discussed. Now hæmatocele, though not a disease—only a symptom—is in itself complex; it may occur not only in the non-pregnant, but also in the pregnant condition; in the latter case usually as a consequence of extra-uterine pregnancy. The hæmatocele, whatever its origin, can cause inflammation of the pelvic peritoneum—*pelvi-peritonitis*—a disease which presents itself at every step of gynæcology, and a knowledge of which precedes that of the other female genital affections, as, at the commencement of the present century, the study of pleurisy did that of pulmonary affections. In the study of pelvi-peritonitis we learn that it very frequently is otherwise originated than by hæmatocele—*e. g.*, from a morbid condition, generally inflammatory, of some one of the sexual organs. Finally, uterine displacements are directly connected with pelvi-peritonitis, and the study of these deviations concludes the second volume.

From this general view of the scope and character of the work, we proceed to the examination of its contents in detail.

In order that menstruation may take place normally, the concurrence of several phenomena is essential; among these are active congestion of the genital organs, and the application of the fringed extremity of the Fallopian tube to some portion of the corresponding ovary; sometimes, indeed, there is an actual union by means of a thin transparent membrane—dilatation of the orifices, and especially of the uterine neck. Under the influence of what is called physiological teaching, physicians are occupied almost entirely with this congestion alone, which to them if not the first stage of inflammation, is but a step from it. Although there may be inflammation of the uterus, and especially of its appendages, and reaction of this upon the pelvic peritoneum, when congestion deviates from its normal type; and though, consequent upon the same deviation, there may be phlegmonous inflammation of the large ligaments, yet these restrictions being made, the morbid congestion or inflammation, in a large majority of cases, is secondary to a failure of excretion of the menstrual fluid, and ought to be attributed to the action of the retained liquid, and the reaction of the organs which strive to expel it. Where the menstrual fluid cannot effect its natural exit from the uterine cavity, it distends that cavity more and more, and also the Fallopian tubes; the uterus, in consequence of the thickness of its walls and their contractility, partly resists the distending force, and compels the incompressible liquid into the tubes. Thus this second period of menstrual retention causes symptoms closely resembling phlegmons of the large ligaments, and the resemblance is increased by the fact that inflammation may result from this tubal distension. Still further, it is easy to understand that when the union between the tube and ovary is slight, it may be ruptured, and the catamenial fluid pass *into the abdominal cavity* from the distended tube and uterus—the effusion there giving rise to a peritonitis, oftenest local, but sometimes general. But when this

ticien, Paris, 1844, sufficiently shows: La menstruation est une fonction d'élimination, de sécrétion; elle peut donc faire défaut dans deux circonstances distinctes: elle n'aura pas lieu lorsque l'exhalation du liquide menstrual ne s'effectuera pas, ou lorsque l'excretion de ce liquide sera empêchée. Cette importante considération nous amène à diviser l'aménorrhée en deux grandes sections. A. *Aménorrhée par défaut d'exhalation ou de sécrétion.* B. *Aménorrhée par defaut d'excrétion.*

solution of continuity does not occur, or when but a partial peritonitis has resulted, by and by the congestion diminishes, and there supervenes a new series of phenomena due to the changes in the liquids, and in the natural or accidental cavities which contain them. Among these morbid phenomena are, 1st, blood concretions, dropsies of the uterus and of the tubes, or tubo-ovarian cysts, as immediate results of menstrual retention; and, 2d, metritis, phlegmons of the broad ligaments and of the iliac fossæ as indirect results.

The first case recorded by M. Bernutz, occurred in 1844, at the Hôpital Saint-Antoine, in the practice of M. Piedagnel, whose *interne* he then was; and it is peculiarly interesting as having been the starting-point of the special studies and investigations which have engaged him for more than twenty years. The case is briefly this: The patient was forty years of age, married, had had seven pregnancies, the first five of which terminated in miscarriages, the last two in delivery at the full term. Version was resorted to in the final labour, which was about three years before her entrance to the hospital. At a menstrual period when the excretion did not take place, she experienced uterine pains similar to those of labour, which gradually diminished, but then recovered all their intensity at the next period when the menstrual evacuation should have taken place. During this time, while in a bath, and after a most violent pain, a blood-clot was expelled, and a slight bloody discharge succeeded; and then for nearly a month, up to the date of her admission into the hospital, she had a constant though small discharge of blood, mingled with sanious matter. Upon examination the chief local signs discovered were enlargement and displacement of the uterus, and a three-lobed tumour, exceedingly painful to pressure, occupying all the lower part of the abdomen. In less than three weeks the patient died from peritonitis, and a post-mortem revealed, among other pathological conditions, the right tube distended with blood, the left with blood-clots, and a very large blood-clot occurring in three cysts in the pelvic cavity.

Here we have an hypertrophied or inflamed cervix-uteri preventing the menstrual, just as enlargement of the prostate prevents the urinary flow; the obstructed fluid finding its way into the abdominal cavity successive times, causing hæmatoceles, and giving rise to successive attacks of peritonitis, the last one proving fatal.

Since the observations of Ruysch, the fact that the menstrual fluid may find its way through a Fallopian tube into the peritoneal cavity, has acquired the right of scientific domicile, and been conceded by physicians and anatomists of the first order.

As obstructed menstruation may be followed by the terrible consequences recorded in the case given above, the study of the various obstructions, whether congenital or acquired, whether complete or partial, is of no little importance. These obstructions are considered under eight heads, to wit:—

1. The menstrual excretion may be prevented by an imperforate state of the vulvo-uterine canal, either congenital or acquired before puberty.

2. By cicatrices which, subsequently to puberty, may render this passage impermeable.

3. By contractions, congenital or cicatricial, of the vagina or of the cervix uteri.

4. By increased volume of the uterus.

5. In the fifth variety the excretion is temporarily prevented by the ob-

struction of the cervical canal with accidental products either developed there or in the uterine cavity—polypus, membranous dysmenorrhœa.

6. Uterine deviations, especially flexions.

7. Spasmodic contraction of the uterine neck.

8. In the eighth variety, less known than any of the others, the functional disorder is produced by an abnormal state, either congenital or acquired, of the Fallopian tubes.

Illustrative cases of these different varieties are given, and many discussed at much length. Among the illustrations under the second head, some of the most interesting are those of occlusion of the os uteri from cauterization, from amputation of the cervix, from gangrene of the vagina, and from difficult premature labour.

In reference to that variety of dysmenorrhœa for which Mackintosh used bougies, and Prof. Simpson and his followers have used the *hysterotome* with such freedom, M. Bernutz states that it has been received with great reserve in France, and the operation proposed to remedy it with still greater reserve. And he very justly adds—and this is a point of which possibly those who are favourable to the operation sometimes lose sight—that the fact of benefit resulting from division of the cervical canal does not prove that the dysmenorrhœa was mechanical; it might have been spasmodic or congestive, and yet be thus benefited.

Under the fifth variety the author devotes several pages to the consideration of *membranous dysmenorrhœa*, the main points of which are that this is not a disease, but only an epiphenomenon of uterine catarrh, and that treatment in the intervals should be devoted to the cure of this.

"This last indication is the chief one, but also the most difficult to meet, because uterine catarrh, when chronic, is, in the vast majority of cases, a diathetic manifestation, very often scrofulous, which can be so much less easily remedied, as the patient is at the same time very frequently a prey to anæmia, which is in itself a cause of uterine catarrh."

In speaking of the seventh variety, M. Bernutz uses the following language:—

"Hysterical dysmenorrhœa is not rare, and even in some cases it is the first manifestation of hysteria; but I ought to say that this peculiar nervous manifestation of uterine trouble does not authorize the opinion of certain pathologists, among whom it is astonishing to find Scanzoni, who regard the uterus as the seat of hysteria. This malady cannot be localized; it is, as every other malady, an affection *totius substantiæ*, an abnormal physiological state which modifies all the acts of the organism, a pathological condition of life which, as its peculiar character manifests itself by dynamic disturbances, sometimes of one, sometimes of another function, and consequently can manifest itself by functional derangements of the genital organs without our accusing the uterus of disorders of which it is evidently innocent."

Space is wanting to present the author's *symptomatology* of these various forms of menstrual retention; indeed, even the *diagnosis* and the *treatment* must be only briefly referred to.

Among the errors of diagnosis have been mistaking this disorder for commencing pregnancy and uterine cancer; the latter has been committed by such illustrious men as Chassaignac, Nélaton, and even by Bernutz himself. Besides, the hæmatocele consequent upon menstrual obstruction has been mistaken for uterine fibroid, for ovarian cysts, and purulent cysts of the iliac fossa; the first error was committed in one instance by Malgaigne, and in another by Professor Stoltz, of Strasburg, whose case had

furnished him previously with material for several lectures upon fibrous tumours of the uterus: peradventure the record of hospital clinics elsewhere might occasionally furnish examples of lectures upon supposititious diseases.

As to *treatment*, each case has its own special character. Sometimes it is necessary to address ourselves at first to the obstacle preventing excretion; sometimes, on the other hand, before combating it, it is requisite to endeavour to remove the morbid state which has supervened upon the functional trouble, and which determines its persistence. This fact permits the division of menstrual retention into surgical and medical.

"Nevertheless such a division is not advisable, as it divides the history of a single affection, and because it is necessary, in opposition to the programme of Scanzoni, who wishes to make gynæcologists a sort of variety of dentists, to endeavour to fuse the different branches of the art of curing, an art that does not countenance deceptive specializations which only strangers to medicine can dream of, and which are essentially prejudicial to patients."

Where the menstrual retention is caused by complete obliteration, congenital or acquired, of the vulvo-uterine canal, of course requiring surgical interference, the opportune moment for operation is when the genital organs are in the greatest possible inertia: therefore wait for eight or ten days after "a monthly period." Let the puncture, in case of imperforate hymen, or os uteri, be small, so that the escape of the contents may be gradual; for otherwise, contraction of the Fallopian tubes and expulsion of their contents into the peritoneal cavity may be induced; also to prevent the rapid emptying of the womb, all pressure upon the abdomen should be carefully avoided. Nor is it advisable to keep a catheter in the artificial opening—better repeat the punctures until the evacuation of the greater part of the retained blood is effected, then free incision of the obstruction, and the employment of dilating means to insure its patency.

We must omit following our author in his treatment of those cases of absence of the vagina or of fibrous coarctations of this canal, simply remarking that he prefers cutting a passage with the bistoury where the vagina is obliterated by a fibro-cellular tissue; but when this passage is entirely absent, the operation of Amussat is regarded as better, viz., separating the bladder and rectum by means of the finger, the operation being performed at successive periods, and a sponge tent being kept, during the intervals, in the opening thus made. In this connection we cannot help commending an excellent monograph[1] recently issued by Dr. Thos. Addis Emmet.

In case of stricture of the cervical canal preventing free excretion, no operation to obviate the physical obstacle should be attempted during the flow, but wait for the incomplete inertia which succeeds the periodic excitement. Congestion will frequently be found as a consequence of cervical narrowing, and is itself then a cause of deficient excretion: this is to be remedied by leeching, four or five leeches either to the neck or in one of the vaginal cul-de-sacs, a warm bath, and then warm emollient applications over the abdomen with absolute repose. When the flow does not take place readily, the turgescence of the cervix having been relieved by the means previously indicated, recourse should be had to those agents which render regular the efforts of the uterus which are ineffectual because disordered. Ergot seems to be most clearly indicated; but the increase of the flow produced by it is

[1] Accidental and Congenital Atresiæ of the Vagina, with a Mode of Operating for successfully establishing the Canal.

often attended with very severe pain. The author, therefore, prefers *artemisia vulgaris*, rue, savine, or saffron, which may be administered internally or locally, or both; for internal administration they should be in the form of warm infusions, and sometimes it is advisable to add to the infusion opium and ether, to combat the nervous *erethism* to which the patients are subject.

Bernutz states that it is very rare to find narrowing of the uterine orifice as the efficient cause of difficult menstruation, and of course equally rare to find a case requiring an operation, and that he has never had occasion to perform it;[1] where mechanical means are required, he would prefer incision to dilatation. In the fourth species of menstrual retention, that dependent upon engorgement of the cervix uteri, and in its acute stage, the same general indications of medical treatment are to be observed.

In the treatment during the intervals, we should remember that these tumefactions of the neck, although in the majority of cases an inflammatory condition, are nevertheless either directly or indirectly the expression of a diathetic malady, oftener scrofulous than any other; hence the value in many cases of the preparations of iodine, and of sulphur in certain cases, in others of arsenical or alkaline preparations, of sea, or of warm baths, especially those of *Saint Sauveur*.[2] Baths, either simple or medicated, according to the indications, should be frequently advised.

"To this prescription of frequent baths, I conjoin that of the preparations of conium, especially the conicine[3] pills of Guillermont. I strongly advise conium because this therapeutic agent seems to me the opium of the genital organs (sexual organs, mammary glands), and to act in all the affections of these organs, cancerous or other, in a similar way, as a special narcotic which promotes resolution, when possible, in diminishing the congestion consequent upon pain." Besides these different means it is necessary to use local agents for the catarrhal affection which has been either the point of departure of the engorgement of the neck, or which has supervened upon it under the same diathetic influence, and of which the persistence maintains an alteration of uterine nutrition. The details of this treatment will be given, the author promises, in a memoir upon uterine catarrh; in which also will be considered the special therapeutical means required in the dysmenorrhœas comprising the fifth and sixth varieties of menstrual retention.

In the treatment of nervous dysmenorrhœa, which so often drives both physician and patients to despair, it is necessary first of all to determine whether the painful functional disorder is a symptomatic expression, and if then it is connected with anæmia, with chlorosis, or with hysteria; or if on

[1] This experience is in striking contrast with that of some American and British surgeons.

[2] This is a village of the Hautes-Pyrénées, occupying a pleasant position in the valley of *Luz*, at a distance of a mile and a half, northward, from the town of that name, and at an elevation of 2,500 feet above the level of the sea. The water of its mineral spring contains sulphuret of sodium, chloride of sodium, sulphate of soda, silica, caustic soda, and a trace of caustic potash, magnesia, ammonia, and *baregine*.—*Medical Climatology*, Dr. SCORESBY JACKSON.

[3] Dr. Meadows' translation, "pill of conium of Guillermont." The original is "*pilules de conicine*." Guillermont's (Guillermond's ?) pills are made with the seeds of conium; but with seeds a portion of which has been tested to determine the quantity of conicine they contain, and the weight of the pill varies with the relative richness in this peculiar alkaloid of each specimen: hence these preparations are of uniform strength.—*Manuel de Matière Médicale, &c.* BOUCHARDAT. Paris, 1864.

the other hand, it constitutes a special neurosis, like asthma, because in the former cases the disease of which the dysmenorrhœa is but a symptom will rule the therapeutics.

The second memoir by M. Bernutz is entitled *Peri-Uterine Hæmatocele, and its Varieties.*

It is scarcely necessary even to allude to the first two or three pages of this *memoir*, devoted as they are to an establishment of the author's claims not to the discovery of hæmatocele, but to having given to that discovery its true value, and having made investigations that have served as the point of departure for all recent works upon this subject, though these claims had been ignored by Nélaton in his *Surgical Pathology.* We can well omit all this, as the verdict of the profession is, and we use the words of Dr. Graily Hewitt (*Diseases of Women*, London, 1863), that "the claims of Bernutz to be considered as the first modern observer and expounder of this pathological condition stand before all others."

It is important to remember in the study of hæmatoceles, that the product of the hemorrhage isolated from the pathological cause which has produced it, should not be regarded as a disease; the unfortunate blood-clot no more merits the name of a malady, than does hæmoptysis or epistaxis.

Equally important is it for the practitioner to bear in mind that hæmatocele is not of exceedingly rare occurrence, if we accept the statements of some leading recent authorities.

"From[1] my own observations I am satisfied that hæmatocele though not common is certainly by no means so rare an affection or symptom as is generally supposed, nor, in many cases, is the diagnosis a matter of much difficulty. The careful study of the history of those affections which eventuate in hæmatocele, as well as of the co-incident symptoms, is of more value I believe in diagnosis than even vaginal examination."

"This[2] lesion is not of extreme rarity; nevertheless, it has only recently been brought to light, and assigned a definite place in the catalogue of female complaints; and although much has already been done towards elucidating its pathology, much yet remains to be done.

"The whole subject possesses not only novelty but very deep interest, from its high degree of importance."

In a monograph upon *Dysmenorrhœa*, found in the London Obstetrical Society's Transactions for 1865, by Dr. Robert Barnes, the eminent author uses the following language:—

"A secondary consequence—I am persuaded not an infrequent one—is an oozing of blood from the abdominal end of the Fallopian tube and from the surface of the congested ovaries. This is a form of retro-uterine hæmatocele of which I have seen several instances in young girls."

"Although[3] these tumours are almost unnoticed in classic works, they are not very uncommon."

Dr. Day[4] speaks of it as "this almost common affection." These authorities are sufficient, without quoting a line from Bernutz, to show that this affection is not of very rare occurrence; and possibly the practitioner of large experience who avows he has never met with it, might upon careful reflection adopt the language of Dr. McClintock (op. cit.):—

[1] Dr. Meadows' Preface.
[2] Clinical Memoirs on Diseases of Women. By Dr. Alfred H. McClintock. Dublin, 1863.
[3] Uterine and Ovarian Inflammation. By Dr. Tilt. 3d edition. London, 1862.
[4] Clinical Histories with Comments. London, 1866.

"Indeed I can call to mind a few cases occurring in my own practice, which at the time were obscure and perplexing, but which, I have now little doubt, were examples of pelvic hæmatocele, and upon this supposition only can I explain their course and symptoms."

Two or three causes embarrass the study of hæmatoceles. One is the various terminology of different writers. Thus many of the French authors, and some of the English, give these effusions the designation of *retro-uterine*, even situated in front or laterally with reference to the uterus, as well as behind it. Dr. McClintock, as we see, terms it *pelvic*, reserving the epithet *uterine* to characterize blood effusions into the substance of the uterus. Bernutz confines the term hæmatocele to intra-peritoneal effusion of blood occurring in the non-pregnant state, designating as thrombus the extra-peritoneal effusions. Nélaton, Voisin, Prof. Simpson, and some others, do not observe these distinctions; and thus group together affections that are separate in their pathology.

It probably would be best to follow the nomenclature as well as the pathological distinction of Bernutz.

Our author divides hæmatoceles as follows:—

1. Those symptomatic of utero-tubar varices. Of this division he gives three examples, one of which occurred in the practice of Goupil and himself.
2. Hæmatoceles from hemorrhagic pelvi-peritonitis.

Two illustrations are given where the hemorrhage, in each case fatal, could be attributed to excessive coitus. But the author rests this variety of the affection upon pathological analogy; thus other serous membranes, as the arachnoid, the pleura, the pericardium, even the abdominal peritoneum, may be the seat of a blood exhalation; why not therefore the pelvic peritoneum as well?

3. Hæmatocele symptomatic of a rupture of the ovary or Fallopian tube.
4. Hæmatoceles symptomatic of obstructed menstrual excretion.
5. Metrorrhagic hæmatoceles.

"I unite in this fifth and last species all the intra-pelvic hemorrhages which in the non-pregnant state, result from a morbid discharge, either affecting all the genital organs, or limited to a certain number of them, one portion of the discharge being accidentally effused into the peritoneum, and the other passing by the vulva and constituting a more or less abundant metrorrhagia."

M. Bernutz dwells upon the importance of not regarding the pelvic effusion as the disease in this variety more than in any of the others; and he criticizes, justly we believe, the designation which Trousseau has given it of "*catamenial* hæmatocele," by which he wished to indicate that the genesis of these effusions, that appear as an accidental epiphenomenon of metrorrhagias, is intimately related to menstruation.

Of course the treatment of these affections will be mainly determined by the causes, and by the results. Many of the former have already been sufficiently noticed in our review, while the latter will be glanced at in the memoir devoted to *Pelvi-Peritonitis*. In the acute stage, stop the hemorrhage; and for this end opium, cold acid drinks, cold to the abdomen, may be used.

"In the metrorrhagic variety, when the first period has passed without mischief," we quote Dr. Meadows' translation, "we must give iron, use the wet sheet, and good diet, and every third day from half a drachm to a drachm of quinia. M. Trousseau thinks this a specific. I cannot agree in this, though I

do believe it to be the most suitable drug in the anæmic cachexia peculiar to women with metrorrhagic hæmatocele."

A word in regard to the quinia prescription. From thirty to sixty grains of quinia in a day would be considered somewhat heroic practice in such cases, by either western or southern practitioners, who are not quite as much afraid of the deleterious influences of large doses of quinia as some of our eastern friends! It is to be hoped that Dr. Meadows will look at the original once more before he tries these doses upon any London metrorrhagic hematoceles. Thus looking he will find the text is "2 *à* 4 *grammes de poudre de quinquina royal*," in other words, from thirty-six to seventy-two grains of powdered yellow bark.

The third memoir is the work of Goupil, and is devoted to the study of *Intra-Pelvic Hemorrhage occurring in Extra-Uterine Pregnancies.*

The sources of hemorrhage in these cases may be—1, rupture of dilated ovarian veins; 2, rupture of the ovary; 3, rupture of the Fallopian tube; 4, rupture of the cyst; 5, the interior of the cyst itself.

The diagnosis is that of pregnancy, conjoined with the detection of a tumour exterior to the womb. Generally death occurs in a few hours or days after the commencement of the hemorrhage, and though delayed in one case here reported, such delay is altogether exceptional.

The most important parts of the treatment are rest in the horizontal position, and opium freely given, possibly for its hæmostatic power, at any rate for the relief of pain. In general, as in the hæmatoceles of the non-pregnant state, surgical interference is not advisable.

The fourth memoir is by Bernutz, and is devoted to *Pelvi-Peritonitis.*

Quite within the memory of some of the younger members of the profession pelvic cellulitis first found general acceptation in the catalogue of female diseases. Churchill, Simpson, West, not to mention many other British writers, made important contributions to our knowledge of this disease, until almost every physician met more or less often with the malady both in the puerperal and in the non-puerperal state; while he who confessed to never having seen a case would be regarded as not quite "up" with the progress of medicine. But if we accept the teaching of M. Bernutz, pelvic cellulitis is a vanishing quantity in the mathematics of female disorders.

Hemorrhagic pelvi-peritonitis having been studied in the previous memoirs, here we have presented to us sero-albuminous, or purulent inflammation of the pelvic peritoneum. These are almost always symptomatic of an affection of one of the internal genital organs, which causes inflammation of the pelvic serous membrane either by contiguity or continuity, but which, notwithstanding this important *role*, oftenest passes unperceived during life, because the symptoms of the partial peritonitis are much more marked than the peculiar signs of the genital affection which has given origin to it. Pelvi-peritonitis is the most prominent element of quite a large nosological group, in which are comprised the most interesting, but also the most obscure, affections of gynæcology. The appreciation of the morbid elements that this eminently complex subject presents is as difficult as was, before the discovery of auscultation, the interpretation of the different varieties of pleurisy, to which under so many respects pelvi-peritonitis can be compared. And the ulterior progress of uterine pathology is as directly subordinate to the knowledge of this affection, as the progress of pulmonary pathology was to sufficiently complete knowledge of pleuritic inflammation.

We cannot follow our author in his anatomical description of the cellu-

lar tissue contiguous to or connected with the womb; on this, and on post-mortem examinations, he bases his argument against what English authors generally term, after Professor Simpson, pelvic cellulitis. The existence of phlegmonous inflammation of the broad ligaments he admits.

"There is not an observer who has not seen, especially after confinement, these phlegmons of the broad ligaments, and who did not recognize the swelling so prone to suppuration with its march inevitably progressing towards the abdominal walls, or towards the deep illiac fossa; and who, finally, could not distinguish this swelling from the inflammatory tumours which have received the names of engorgements of the uterus, chronic partial metritis, and at last that of peri-uterine phlegmons. The phlegmons of the broad ligaments are situated in the cellular tissue placed at the side of the womb; they occupy the only cellular tissue there found."

Dr. Graily Hewitt (*op. cit.*), in reference to the peculiar views of our authors, uses the following language:—

"Bernutz and Goupil take a somewhat different view of the question of pelvic inflammation from that held in this country. In the second volume of the work by these authors, recently published, will be found a full exposition of their opinions on the subject of pelvi-peritonitis; an affection which, it is their object to prove, should have an important place assigned to it. Many very valuable facts have been brought forward by these authors, and which prove that inflammation, abscess, &c., of the peritoneum covering the ovarian pouch, and the fimbriæ of the Fallopian tubes, is much more common than is believed to be the case; that in addition to puerperal causes, menstrual derangements of various kinds, blenorrhagia, venereal excesses, and traumatic causes, may lead to inflammation and purulent collections in the locality in question; and they endeavour to draw a parallel between the phenomena witnessed in the male—orchitis and hydrocele—and these inflammatory conditions of the peritoneum surrounding the extremities of the Fallopian tubes and the ovaries. They argue for an almost exclusively intra-peritoneal seat of the inflammation, the argument pursued being the same as in reference to the seat of the hemorrhage in peri-uterine hæmatocele.

"With acute peritonitis of the pelvic cavity, as the result of injuries of the generative organs during delivery, after operations, &c., we have been long familiar, but these authors endeavour to show that this peritonitis, now acute, now chronic, occurs in connection with diseases of the womb, Fallopian tubes, &c., to a greater extent than was before suspected. It is impossible to disregard the weight of evidence brought forward in favour of these peculiar views; but many of the cases which are described by Bernutz and Goupil as cases of pelvi-peritonitis would certainly be considered by pathologists in this country as instances of abscess of the connective tissue beneath the peritoneum."

We certainly cannot believe that many of the cases of pelvi-peritonitis adduced by Bernutz would be considered by pathologists in Great Britain as instances of abscess of the connective tissue beneath the peritoneum. Where recovery took place, of course the seat of the disease might be disputed; but where post-mortem examinations proved the cellular tissue to be intact in most instances, and in a very few to be, compared with the peritoneum, but slightly involved, surely there is no adequate foundation for the assertion Dr. Hewitt makes.

The first case given by Bernutz is that of a patient who, twelve days after an attack of blennorrhagia affecting the urethra, vagina, and uterus, had severe pains in the lower part of the abdomen; the twentieth day entered the hospital; then had acute suffering in the hypogastric region, especially severe on the left; and by touch, a tumour, encircling three-

fourths of the neck of the womb, was discovered. The patient died from pleurisy, and the autopsy revealed numerous peritoneal adhesions, anteflexion of the womb, purulent collections in the vicinity of the left ovary, and also in the right tube; left closed; the ovaries, and all the cellular tissues of the broad ligaments and of the uterus perfectly healthy.

The second case is menstrual suppression, development of a supposed peri-uterine phlegmon, during the evolution of which successive uterine displacements were produced. Death from malignant variola. Post-mortem showed uterine deviation, peritoneal adhesions between the posterior face of the uterus and the rectum; inflammation of the tubes; peri-uterine cellular tissue healthy. The third case, menstrual suppression from cold on the fifth day of the flow; almost immediately vomiting, and very acute pain occupying the lower part of the abdomen, and there slight tension; the sixth day a retro-uterine tumour, two-thirds the size of the fist, resembling in shape a hæmatocele, but more fluctuating; then general peritonitis, with death on the twelfth day from the suppression. Lungs and digestive organs healthy; glutinous peritoneal adhesions, and sero-purulent fluid in the abdomen; the pelvic cavity encysted by adhesions between the folds of the small intestines themselves and to the superior border of the uterus, distended with a large amount of sero-purulent fluid; purulent distension of the tubes; lining membrane of the uterus diseased, and its enlarged cavity filled with a muco-sanguinolent fluid; cellular tissue of the large ligaments of the uterus, and especially that of the utero-rectal cul-de-sac perfectly healthy.

The fourth case is one in which "gastrotomy was performed for supposed ovarian tumour, which proved to be an intestinal mass united together by adhesions." After detailing this case as recorded at the time in the *Philadelphia Medical Examiner*, M. Bernutz adds a few words in reference to it, which we transcribe:—

"I have no reflection to add; the details speak for themselves. They establish conclusively that the intestinal convolutions, united together by old peritoneal adhesions, could so completely simulate a liquid tumour that four physicians of a great hospital thought, after thorough examination, they established from this deceptive sensation, the indication for one of the gravest operations of surgery. We do not decide whether the indication was rash or not, but simply remark that the operation commenced, and even when a free incision was made into the abdomen, the error still persisted."

Reference is then made to one of his own cases, where, during life, he believed he was treating a peri-uterine phlegmon, which proved, very much to his surprise at the autopsy, to be a tumour constituted similarly to that recorded above.

Without pursuing the reference to the cases observed or collected[1] by M. Bernutz any further, we shall proceed at once to mention the divisions made in accordance with the etiology of the division. Thus, of ninety-nine cases, forty-three were puerperal;[2] five after abortion, thirty-five after

[1] One of these is from the pen of the late Dr. John P. Harrison, and will be found recorded in the 30th number of this Journal, February, 1835. Dr. Harrison entitles it *Inflammation of the Fallopian tubes and ovaria terminating in a purulent deposit, with a fatal catastrophe.* But those who study it in the light of our author's teaching will see in it a *pelvi-peritonitis* from menstrual suppression.

[2] M. Bernutz, in his special descriptions, divides the puerperal into those following labour at full term, and in those consequent upon abortion—making thus in all five, instead of four, divisions of inflammation of the pelvic-peritoneum.

accouchement, twenty-eight blennorrhagic, twenty menstrual, eight traumatic, three consequent upon venereal excess, two during the evolution of chancres of the cervix, two after the employment of the uterine sound, and one after an ascending vaginal douche directed for a pseudo-membranous ulceration of the cervix.

Symptomatology of Pelvi-Peritonitis:—

"Of the numerous difficulties which invest this part of the subject, some result from the fact that this disease, unless traumatic, is consecutive to an affection of one of the intra-pelvic organs; and others that it produces, in almost every case, uterine deviations. Thus complex, it is necessary in every case to discriminate what part is to be attributed to each of these morbid states, not assigning to one that which belongs to another, as is so often done with reference to uterine displacements which do not, unless in exceptional circumstances, cause pain. Pain, on the contrary, is the salient-phenomenon of pelvi-peritonitis, as it is of acute inflammation of serous membranes in general. * * * In the acute form, the patient either without precursory phenomena in the traumatic form, or after a few days of *malaise*, during which she has experienced pelvic weight, or other symptoms dependent upon that affection of the uterus, or of its appendages, which has reacted upon the peritoneum, is taken suddenly with sharp abdominal pain. The pain in each case varies in intensity and extent. Sometimes it occupies the entire hypogastric region, and irradiates thence over the abdomen; sometimes it occupies only the two iliac fossæ, sometimes but one; it renders urination and defecation painful, and causes shooting pains on the front and inside of the limb. Occasionally this pain is slight, and very rarely it is not observed. It is aggravated by movements of the limbs, coughing, deep inspiration, &c. * * * * Abdominal and vaginal explorations are excessively painful the first few days; nor are they necessary, for then neither tumour nor uterine deviation can be detected. * * * Occasionally the patient may sink in a brief time, with general suppurative peritonitis, but ordinarily the febrile action diminishes, and the abdominal pain loses its intensity. * * * A vaginal examination will discover, sometimes, a tumour in one or more of the cul-de-sacs—sometimes only a vague resistance; and finally, sometimes only pain, without the least feeling of resistance in parts where a subsequent exploration will detect a swelling. It is necessary, therefore, to repeat the examinations, and those who are commencing *à toucher*, should not, because they find one day no tumour which is apparent a day or two subsequently, doubt their sense of touch, and, in their discouragement, neglect a mode of exploration with which it is as necessary to be familiar as with auscultation. This sensation of a tumour perceived in one or more of the vaginal cul-de-sacs is so much more interesting to study, as it is, in pelvic peritonitis, the sign analogous to the flatness, or rather the defect of elasticity to percussion observed in pleurisy. Unfortunately there are, in the sensation which the touch gives, a number of slight differences which it is impossible to communicate to those who have not that special tact, without which every uterine affection is a sealed book. * * * The tumour, as the term peri-uterine indicates, is adjacent to the uterus, and in this way is distinguishable from the different enlargements, partial or general, of this organ. It is separated from it by a furrow, sometimes very distinct, at others slight; and in the latter case it is rather by the difference of height, of elasticity, and by the peculiar configuration of the supposed tumour, that it is recognized as independent of the uterus.

"Limited to a greater or less extent of the circumference of the uterus, it leaves free one or more, or at least one part of the vaginal cul-de-sacs, all of which it is necessary carefully to explore, not only by the touch, but also conjoined with it abdominal palpation. By this comparative examination there can be ascertained not only the existence of the tumour and its extent, but also the extent of the uterine circumference not involved, and to appreciate the different displacements, versions, flexions, or rotations on its axis, which the uterus has undergone. The depression with the finger of the free part of the

cul-de-sacs enables us to ascertain—and still more certainly by comparative measuring—the fulness of the parts affected, then the varying resistance of different parts of the circumference of the uterine neck, from which, as a centre, all our investigations should proceed.

"Subsequently we can explore one face or one border of the uterus, which is much more useful in the recognition of any flexion of this organ. This is a very important point, since a flexion may be so easily taken for a peri-uterine tumour that too much attention cannot be given to this part of the exploration. Examination of the free cul-de-sac informs us whether it is increased or diminished in size; increase and diminution, which are determined by the displacements the tumour has impressed on the uterus. These displacements may be various, not only according to the different cul-de-sacs invaded by the tumours, but also according to the point, more or less elevated, that this tumour occupies in the same cul-de-sac, and also according to its thickness."

M. Bernutz next proceeds to speak of the various uterine displacements resulting from pelvi-peritonitis, giving drawings illustrating these, and stating that displacement *en masse* is the rarest, and *latero-version* the most frequent.

"It is to be borne in mind that these tumours at their debut are not large, and are only accessible to vaginal touch, the iliac fossa presenting but a vague sense of fulness. Later, as a consequence of continued or of renewed inflammation, the latter generally, and resulting from menstrual congestion without discharge, or from bodily fatigue, these tumours present at their vaginal surface more or less distinct, hard prominences, and can also be detected by abdominal exploration; very rarely do they pass the superior limit of the pelvic excavation, and when they do, only one or two fingers' breadth.

"Sometimes pelvi-peritonitis terminates in resolution in three or four weeks, more especially where it has been of small extent, and consequent upon accidental menstrual suppression. Oftener it assumes the chronic form to the great despair of patient and physician; there are frequent renewals of inflammation especially in the puerperal form of the disease, or in those varieties which have for their cause chronic catarrhal metritis, either blennorrhagic or scrofulous. But space is wanting to describe all this, as well as the cachectic condition of the patients from the anæmia which is itself a cause of renewals of the disease, the hysteralgia, which is not to be confounded with irritable uterus, the metrorrhagia,[1] which is so frequent an occurrence in the course of pelvi-peritonitis, for which often the best hæmostatic is a large blister or leeches to the painful iliac fossæ."

The author's observations in reference to the nervous state of these patients, are of such value that we cannot forego presenting the following extract:—

"This is sometimes to be attributed to the cachectic condition induced by the long continuance of the disease, and sometimes to the development of hysteria, or of hypochondriasis which the orchitis has excited, not directly, but by the depressing mental anxieties which are almost always the sad companions of affections of the genital organs. We insist upon this, that the diseases of the genital, more than those of any other organs, have the unhappy privilege of

[1] M. Bernutz suggests that the frequency with which metrorrhagia is observed in the patients at Lourcine is to be attributed to the mercurial treatment to which they were subjected for syphilitic affection which they had in addition to pelvi-peritonitis. And here, probably, most would coincide. But how reconcile it with the statement of Guerin (op. cit.) where, after speaking of the notable diminution of the blood-globules of the syphilitic, he observes:—

"C'est lá une indication incontestable de l'utilité des médicaments toniques, tels que le fer et le quinquina. Mais chose merveilleuse! le mercure, que par son action sur un homme sain, produria infailliblement un appauvrissement du sang, est l'agent le plus propre à reconstituer les globules chez un sujet syphilitique."

making men and women hypochondriac—women still more than men, who regard themselves as smitten with a sort of physical disability—because we do not think these mental sufferings have been sufficiently regarded in female pathology. We wish particularly to indicate in the development of the nervous accidents of the final periods, the influence of the cruel and numerous griefs and the anxious fears as to the future, which the affectionate woman experiences from the long duration of a pelvi-peritonitis. We are fully convinced that these sufferings, the fear of losing the affections upon which her happiness depends, the fears as to the future which unhappily are not always ill founded, better explain the genesis of hysteria in these circumstances, than all the ridiculous nonsense about the sympathies of the uterus which only mystifies the matter."

We must omit, for want of space, all reference to the special descriptions of purulent and of chronic pelvi-peritonitis, and pass directly to the

Diagnosis.—This varies in the acute and chronic forms of the disease, and also in the different stages of the first. In the acute form we may confound pelvi-peritonitis with hæmatocele, inflammation of an ovarian cyst, or phlegmon of the iliac fossa; the tumours of pelvi-peritonitis may be distinguished from inflammation of the broad ligaments, by their position, their physical characters, and by the uterine displacements they cause. The chronic form may be confounded with uterine engorgements, uterine displacements, and fibroids and hysteralgia. As to the first of these diseases, "unfortunately it may be said that we know but little in comparison with that which we do not know; the diagnosis is not difficult in those cases where the uterus is uniformly increased." "The diagnosis is not very difficult even where the general uterine engorgement is connected with a tubo-ovarian varicocele which, at the menstrual period and during the active stage of the losses symptomatic of this hemorrhoidal condition of the genital organs, causes tumours, semifluctuating and lateral to the uterus, but which have this peculiarity that they disappear as the discharge ceases." The author, in illustration of this point, then refers to the case of a lady from Kentucky, in which one of his colleagues had diagnosed a peri-uterine phlegmon; but which he, himself, ascertained to be varicoceles, as they were only manifest during menstruation. The whole subject of diagnosis occupies between 70 and 80 pages; but with this glance we must pass on to the

Treatment.—From the numerous varieties of the disease it is impossible to formulate treatment applicable to all cases. The therapeutic indications are different in the acute and chronic forms; different too, in sero-adhesive and in purulent inflammation, and especially as to the malady of which this disease is the consequence and as to the constitutional state of the patient. In the acute form leeches should be applied to the iliac regions twenty-five or thirty, followed by wet compresses, or warm poultices, if they can be borne; repeat the leeches, if the disease is not checked and the strength of the patient will permit, in eight or ten hours.

Very rarely will it be advisable to resort to leeching the next day; but then if a satisfactory amendment has not been attained, cover the entire abdomen with a camphorated blister. Internally give every hour one-fifth of a grain of extract of opium until narcotism is induced; then lengthen the intervals so that only slight somnolence may be maintained. In this initial period, all purgatives should be avoided, calomel as much as any other. Where constipation subsequently demands interference, lavements of warm water thrown through an œsophagus tube introduced as high up

as possible so that the injection may pass into that part of the intestine that does not descend into the pelvic cavity.

When suppuration has occurred, and symptoms of hectic are manifested, then an artificial opening may be made, preferably in the vagina; but the purulent cyst should not be injected, even with warm water, as advised by Recamier, for a fatal result has followed this simple and apparently safe operation, still less with solutions of iodine, as proposed by Demarquay. After the puncture, absolute repose should be continued, cataplasms and emollient enemeta made use of, and such therapeutical means as the condition of the patient may require.

In the sero-adhesive inflammations of the pelvic peritoneum, the symptoms are rarely so grave as in the first form, and therefore do not ordinarily demand such vigorous antiphlogistic treatment. Still, at first the leeches may be applied to the abdomen when the speculum cannot be introduced without causing pain; but when it can, then leeches to the neck of the womb will be much more efficient and safer too than scarification, which causes very slight loss of blood, and in a case reported by Aran, was followed by general peritonitis that rapidly proved fatal. The leeching of the neck may be repeated as occasion requires, and blisters to the iliac regions. In the second period of this variety, absolute repose, laudanumized cataplasms, a bath every three or four days, powdered seeds of conium internally, and especially a properly selected regimen, constitute the essentials of treatment. In order to prevent movements of the genital organs, caused by walking, &c., M. Bernutz advises that the patients, even some time after their recovery, should wear a hypogastric girdle, a sort of corset for the lower part of the abdomen; of this an excellent illustration and description are given. It is advised for similar reasons to those which make the surgeon recommend in man a suspensory bandage in case of orchitis. By immobilizing the organs, we contribute to the comfort of the patient, and often prevent the continuance of the disease in a chronic form.

"In the *treatment of the chronic form*, bleedings pomposuly styled 'derivatives and revulsives,' and low diet, should not be resorted to. Sometimes it may be necessary to apply leeches to the cervix-uteri; sometimes to use blisters, dressing the vesicated surface with muriate of morphia when the pains seem at all neuralgic; when menorrhagia occurs, repose on the bed, which constitutes the most essential part of the treatment of pelvi-peritonitis whether acute or chronic, should be enjoined, and anti-hemorrhagics may be administered internally, and sometimes leeches or a blister to one or the other of the iliac regions may be advisable. In cases where nervous symptoms predominate recourse should be had to *hydro-therapia;* let the patient be wrapped each morning in a wet sheet, and over this a blanket so as to produce free perspiration. On the other hand, where digestion is difficult, alkaline baths, and at each meal[1] Vichy water; sulphur baths and sulphur waters internally for those who have at any time had any scrofulous manifestations; finally arsenical baths for those having rheumatic pains, and especially to those who under the influence of either arthritis or scrofula are subject to cutaneous diseases, and then in addition in some of these cases Fowler's solution may be given internally:" such is the treatment advised.

The author dwells here, as well as elsewhere throughout the volumes, when discussing treatment, especially upon the importance of appreciating the diathesis of the patient in order to direct the medication.

[1] Vichy waters are simply a pleasant form of solution of bicarbonate of soda; upon this salt all their medical activity depends.

"I have never seen," he remarks, "I can truthfully say, in patients who take suitable care of their health, their disease persist during consecutive years, at least when they were not the victims of a diathetic malady which perpetuated their sufferings."

Uterine Deviations, which constitutes the final memoir of these valuable volumes, is the work of Goupil; we cannot now enter upon its presentation, and we the more cheerfully postpone this duty as we desire to discuss at some length the views therein presented in comparison with the teachings of other authors, both American and foreign, and therefore it seems proper that this work should be made the subject of a separate review.

M. Bernutz, in his preface, frankly states, that notwithstanding the trouble taken in the preparation of this work, he does not claim for it freedom from deficiencies and imperfections, and that he even thought it probably but a transitory production, serving as a starting point for future works.

We believe the profession will accord it higher praise, and its merits will secure for it more than a transitory existence.

The last edition of Dr. Tilt's *Uterine and Ovarian Inflammation*, London, 1862, contains four admirable lithographs of pseudo-membranous ulcerations of the neck of the womb, for which the author states his indebtedness to Bernutz and Goupil, and "which are destined to adorn the third volume of their work on Diseases of Women." We cannot tell what changes the lamented death of Goupil may have made; but the issuing of a third volume will not occur at any rate until after the edition of the first and second is exhausted. And yet we are sure physicians would hail with delight a work from Bernutz in which, among other subjects, that of catarrhal metritis should be fully discussed; we are sure such a work would meet a need that those who have much to do in the treatment of diseases of females often and urgently experience.

One word as to the Sydenham Society's Translation. This is an abridgment; a comparison of the number of pages of the original and that of the translation, will show how much the former has been shortened. And this abbreviation has been obtained at the expense of many of the cases—many thrown out altogether—of the reflections connected therewith, as well as of some of the authors' text, &c.; elimination and condensation have been most freely resorted to. We do not wonder that M. Bernutz thinks the English translator and editor has committed an error in sacrificing so much of the original.

And he must be a sanguine man indeed who, in reference to the first volume in which 590 pages were condensed into 276, could write, "It is hoped that this has been done without any material loss to the usefulness of the work." (*Extract from Report presented to the Eighth Annual Meeting of the New Sydenham Society.*)

Might not translators, who may be under the necessity of abridging, confer a greater benefit upon their readers, if, instead of subtracting this, and condensing here, and eliminating there, they would simply cut off one end of the work—in a word, follow the example of Procrustes, the famous robber of Attica?

T. P.

ART. XVIII.—*The Indigestions; or Diseases of the Digestive Organs Functionally Treated.* By THOMAS KING CHAMBERS, Honorary Physician to H. R. H. the Prince of Wales, etc. etc. 8vo. pp. 287. Philadelphia: Henry C. Lea, 1867.

THE precursor of this work, entitled "Digestion and its Derangements," and the work entitled the "Renewal of Life," have made Dr. Chambers well known to medical readers of this country. As an author, he is original, independent, out-spoken, and practical. The works just named are rich in facts, and abound in views of pathology and practice, which, if not always sound, are striking and suggestive, leading, in general, in the direction of restorative or conservative medicine. These characters belong also to the work which we now purpose to notice.

The plural number—indigestions—is significant, denoting the important fact that there are various forms of disorder of the digestive system. The term dyspepsia, used in its usual comprehensive sense, embraces numerous functional affections concerning which the progress made in physiological knowledge of late years has shed much light. It is not, as heretofore, the name of a particular affection of the stomach, but it comprehends varied derangements, intestinal as well as gastric. Moreover, attention to the digestive functions enters more or less into the consideration and treatment of almost all diseases, as the author remarks—

"It is almost impossible to exaggerate the importance of the digestive viscera to the cure of disease. In every acute case, surgical or medical, the modification of the result produced by our efforts depends almost entirely on how far, how wisely, or how foolishly these organs are watched over; whether they are well or ill treated, either by the scientific guidance of the skilled physiologist, or by the empirical rules of the routine practitioner, or according to the tradition of the nurse or the instinct of the patient." Again: "Whatever value we may attach to the evidence of the dependence of disease on the digestive organs, it is very clear that we look to them for relief from disease. Out of the six or seven hundred forms of medicines in habitual use, very few indeed are not occasionally offered to the stomach for acceptance, and an overwhelming majority of them are adapted for use only in this way. If we are still to employ this time-honoured agency in our attempts to cure bodily ailments (and I see no threatening of a change at present), it is surely a matter of great interest to secure the active working condition of what our forefathers in anatomy picturesquely called the *portal*."

The indigestions are varied in respect of different kinds of food. Dr. Chambers considers separately, 1st, indigestion of starch and sugar, or vegetable food; 2d, indigestion of albumen and fibrin; 3d, indigestion of fat; and, 4th, indigestion of water. Chapter second of the work is devoted to these different indigestions. The plan which the author pursues is to illustrate different practical points relating to causation, symptoms, etc., by brief abstracts of cases selected from hospital records or notes of private practice. Two hundred and twenty-seven illustrative cases are introduced in the volume. With respect to the indigestion of starch and sugar, cases are given to show its dependence on a lack of albuminous food and pleasurable emotion, on voluntary abstinence, loss of appetite, Bright's disease, muscular exhaustion, a sudden mental shock and wearing mental distress. Of the agency of the mind in inducing indigestion the author states, and as we believe correctly, that "perhaps to that more than to any other cause

the history of it may be traced in the classes of society placed above the chance of physical want." He supposes that chronic catarrh of the stomach induces dyspepsia "by enveloping the food and impeding the gastric juice from freely mixing with it." Chronic catarrh of the stomach, however (if it be insisted upon that this superfluous word catarrh be used) is not a functional affection, but neither more nor less than subacute or chronic gastritis.

The illustrations of indigestion of albumen and fibrin are few. The author states that—

"The digestion of animal food is less interfered with by external circumstances, and therefore less frequently interfered with than that of vegetable. Some considerable debilitating action on the nervous system is required to produce even an acute temporary dyspepsia of meat. And I may observe that it is through the nervous system in almost all instances that proteinous indigestion arises."

Indigestion of fat is independent of the salivary and gastric fluids, the digestive changes in this alimentary principle taking place in the small intestine, and effected chiefly by the agency of the pancreatic secretion and the bile. Hence, fat may be fully digested notwithstanding the indigestion of starch, sugar, and albuminoids; and, *per contra*, indigestion may relate exclusively to fatty articles of food. The indigestion of fat is a notable feature of most cases of pulmonary tuberculosis, and is implied in the name phthisis. Cases are introduced to illustrate the ability of the system to tolerate tuberculous disease provided fat be digested in abundance, and, on the other hand, the inability to arrest that disease if the power of assimilating fat be much impaired. Clinical observation will, we believe, sustain the correctness of the point just stated. With regard to the management of tuberculous disease the author justly remarks: "It is truly by aid of the digestive viscera alone that consumption can be curable. Medicines addressed to other parts may be indirectly useful sometimes, but they more commonly impede the recovery; whereas aid judiciously given in this quarter is always beneficial and often successful." He adds: "The effects of cod-liver oil become less and less a marvel the more we know of physiology." * * * * "To find the easiest assimilated oil, and to prepare the digestion for the absorption of oil, are the main problems in the cure of consumption." Fat is sometimes eaten with relish although not digested, but there is sometimes an invincible repugnance to fat. Dr. Chambers attributes in some cases the repugnance to meat to the disgust for fat, inasmuch as "all flesh is scented by its own peculiar adipose tissue." It is an interesting fact that the desire for fat is generally developed at puberty. In some persons the repugnance to fat existing before, continues after, puberty. This is apt to be the case in girls, and perhaps proceeds, in some instances, from the idea sometimes inculcated on the youthful mind that eating of fat denotes grossness of appetite. Here is an example, among many others, of an antagonism between popular notions and physiology. Dr. Chambers is disposed to think well of the artificial emulsions of fat with pancreatic juice, as an easily assimilated oleaginous article of food. Such a preparation has been introduced by Dr. Dobell, of London, under the name pancreatic emulsion. The apprehension of trichina, which Dr. Chambers suggests, is certainly without foundation if only fat and pancreatic juice be employed in its preparation.

The correctness of the phrase indigestion of water admits of question, inasmuch as water undergoes no change in the alimentary canal. The

facts, however, pointed out under this head are of interest. The density of the blood, its motion and its alkalinity, are considered as the circumstances favouring osmosis into the bloodvessels. Cases are given showing defective osmosis in this direction from diminished density of the blood in anæmia, from retardation of the circulation by valvular disease of the heart, and from a deficiency of acid in the stomach.

Under the head of "Treatment of Indigestion based on the Article of Food not digested," are many excellent practical suggestions. We quote the following:—

"Patients and doctors both make a great mistake in shunning absolutely all that causes pain or inconvenience. They ought to consider whether the thing shunned is or is not an essential to high health: if it be so, every effort should first be used to get it borne without pain; where that goal cannot be reached, wisdom and duty will often guide us to submit to the pain for the sake of the accompanying advantage." Again: "I do not think that we profit much from those off-hand advisers who suppose they accomplish everything by forbidding the use of the sort of food which produces the symptoms. Neither in the indigestion of vegetable, animal, oleaginous, or watery articles of diet does this restore health. On the contrary, as I have shown by examples which every one may cap out of his own patients, if he will but turn them over in his mind, an actual state of disease may arise from persistence in the remedy. A short repose for a time, and abstinence from an unnecessary excess in the undigested dishes, is doubtless wise. But that abstinence must not be complete or final. What the patient wants, when he complains he cannot eat so-and-so, is not to have 'don't' said to him—his stomach has said so already—but to be enabled to eat it like other people."

The treatment based on pathological condition consists of the use of tonics. The author's favourite tonic is quinia in two-grain doses, dissolved in lemon juice and sufficiently diluted, with the addition of from one-twenty-fourth to one-twentieth of hydrochlorate of strychnia.

In chapter third are considered the habits of social life leading to indigestion. Under this head are embraced eating too little, eating too much, sedentary habits, tight lacing, sexual excesses, compression of epigastrium by shoemakers, solitude, intellectual exertion, want of employment, abuse of purgatives, abuse of alcohol, tobacco, tea and opium. The illustrative cases and practical suggestions introduced in connection with these subdivisions of the subject of this chapter will well repay a careful perusal.

The remaining six chapters of the work relate to the following subjects: Abdominal pains, vomiting, flatulence, diarrhœa, constipation and costiveness, and nervous diseases connected with indigestion. Of the manner in which these subjects are treated, the reader may form an idea from the cursory analysis which we have given of the chapter treating of the different indigestions. In the six chapters, with an enumeration of the subjects of which we must here content ourselves, will be found much useful information, many instructive cases, and sound therapeutical counsel. Appended to the work is an analysis giving a list of the two hundred and twenty seven cases arranged with reference to the points which they serve to illustrate.

After what we have already written it is needless to say that we think highly of Dr. Chambers' work. We consider it a work which will do much good in the way of correcting important errors concerning indigestion, dietetics, and the use of medicines—errors still too prevalent among physicians, and which are deeply rooted in the minds of the people. Popular errors relating to health and disease originate in medical doctrines, but while the latter change with the progress of medicine, the former remain so

fixed that physicians have to contend against them long before they are removed. To say, however, that Dr. Chambers' book will be useful in the way of correcting professional and, thereby in time, popular errors, is not to express the sum total of its merit. The author has studied disorders of the digestive system clinically, and as viewed in the light derived from recent developments in physiology and pathology; and his writings show a mental quality not always manifested in connection with talent and learning, viz., good sense. A. F.

ART. XIX.—*St. George's Hospital Reports.* Edited by JOHN W. OGLE, M. D., F. R. C. P., and TIMOTHY HOLMES, F. R. C. S. Vol. I. 1866. 8vo. pp. 444. London: John Churchill & Sons.

IN imitation of the example long since set by the staff of Guy's Hospital, and more recently followed by the medical attendants of the London and St. Bartholomew's respectively, the physicians and surgeons of St. George's Hospital have offered the volume before us as the first of a series to be issued annually under the supervision of the gentlemen whose names appear on the title-page of the work as editors. The first fruits of this laudable undertaking are presented to the profession as a goodly volume of over four hundred pages, containing twenty-four distinct papers, and illustrated with a handsome coloured lithograph and numerous well-executed woodcuts. On these several papers it is our intention to offer a few comments, more or less in detail, as each may seem to require, that those of our readers who may not have access to the volume itself may nevertheless be enabled to form some idea of the richness and variety of its contents.

The first paper is an interesting historical sketch by W. E. PAGE, M. D., senior physician to the hospital, from which we learn that St. George's (originally an offshoot from the Westminster Infirmary, which was the first hospital for the sick supported by voluntary contributions) was opened for the reception of patients January 1, 1733–4, at first being furnished with only thirty beds. This limited accommodation was gradually increased by the purchase of adjacent buildings, till in 1825 the number of beds, though now amounting to two hundred, was found quite inadequate for the requirements of the public, and the rebuilding of the hospital was at once undertaken. The new structure was opened in 1833, and the hospital now contains three hundred and fifty beds, with separate wards for convalescents, and ample room for the convenience of administration and the important adjuncts of lecture-halls, pathological museum, etc. This interesting paper concludes with lists of the physicians and surgeons who have been connected with the hospital since its foundation (the second list especially containing many of the brightest names of British medical science, from Cheselden and Hunter to the illustrious and lamented Brodie), and is adorned with views of the hospital as it was in 1746 and as it is at the present day, the latter constituting an appropriate frontispiece to the volume.

The first of the practical papers offered by St. George's Staff is No. 1 of a series of contributions to the Surgery of the Head, by Mr. PRESCOTT G. HEWETT, favourably known to the profession in this country from his excellent monograph on injuries of the head, contained in Holmes's *System of Surgery*. The present paper is on the "Deviations of the Base of the Skull

in Chronic Hydrocephalus," and is founded upon the careful examination of numerous specimens, and the published descriptions and illustrations of several important cases principally taken from German writers. The most valuable practical point brought forward by the author is the information to be derived from the appearance of the eyes in a hydrocephalic patient as indicating the nature of the intra-cranial dropsy, whether ventricular or merely arachnoidean. Ventricular hydrocephalus, if of early occurrence, will necessarily affect the orbital plates of the frontal bone, diminishing or destroying the orbital arch, and sometimes even largely invading the orbit, by the abnormal convexity produced by the pressure from behind. This condition may be recognized during life by the eyes being more or less driven from their sockets and directed downwards, so that the pupil may be almost concealed by the lower lid, while the white of the eye is more than usually uncovered. Arachnoidean dropsy is uniformly limited to the upper and lateral parts of the brain surface by the existence of a more or less perfect cyst, and is consequently unattended by the peculiarities about the orbit just described. Ventricular hydrocephalus, however, may come on at a comparatively late period, when the orbital plates are not so susceptible of distortion from pressure, without producing appearances recognizable during life. Thus while the presence of the orbital peculiarities referred to is diagnostic of the existence of ventricular effusion, their absence does not certainly show that the arachnoid is alone involved. Mr. Hewett's paper is accompanied with two wood-cuts.

We next have a very well-written paper by Mr. HOLMES on the "Treatment of Meningocele by the Injection of Iodine." One case is reported in full and two more referred to, one of which was likewise treated by injection by the author, and the other treated in a similar manner by Mr. Paget at St. Bartholomew's Hospital, and known by a short notice in the *Transactions of the Pathological Society of London*, vol. xvi. Both of Mr. Holmes's cases proved fatal, though from causes apparently unconnected with the operation, while in the child operated on by Mr. Paget the disease was supposed to have been checked in its course, though nearly three years afterwards a cure had not been obtained. The author terminates his paper by investigating the question whether, in case iodine injection should fail to effect a cure, excision of the entire tumour would or would not be advisable. His conclusion is that the advantages to be derived from the latter operation would be at least questionable; a conclusion to which, we think, our readers will readily accede.

Two papers on "Typhus Fever" come next in order, both of considerable interest, and well repaying a careful perusal. The former is by Dr. R. E. THOMPSON, the medical registrar of the hospital, and gives an account of the epidemic of 1864–5, as observed in the wards. Careful observations were made as to the temperature of the disease, and a "thermograph" of a favourable case is given as an illustration.

"The increase of superficial heat in typhus takes place very rapidly after the first symptoms of poisoning, and there is an exacerbation towards night, the temperature falling in the early morning; the scale of heat ascends higher and higher up to the fifth and sixth days, when the maximum height (in favourable cases) appears to be reached; a slight diminution then takes place, and the temperature remains pretty steady until the day of crisis, when a sudden and rapid fall is observed to take place, in the most favourable cases, to a little below the standard of health, where it remains with very slight variations for weeks. . . . Some sort of prognosis may be made from the observations of the fifth and sixth day of typhus: if the morning temperature be above 104, a

severe attack of fever may be expected; and if the temperature gradually increases during the second week, a fatal result must be anticipated; but this increase must not be a transient aggravation from some special cause, but one continued for a sequence of days, and then the thermometer may be trusted to, anticipating the pulse-evidence by hours and even days. 105° Fahr. is a dangerous temperature for the second week; the highest I have seen reached was 108.5°; this was observed three-quarters of an hour before the patient died."

The author has observed a diminished temperature to follow coldness of the external atmosphere, as well as the coming on of the menstrual flow, a sudden diarrhœa, or the emptying of a distended bladder. In his own case—for he was attacked by the fever—he found that his temperature for some months after recovery was lower than normal.

The second paper on typhus is by Mr. ALLBUTT, of Leeds, and is founded on the observation of more than six hundred cases treated in the Fever Hospital of that town. This paper is eminently practical, and his conclusions, which we copy in full, are entitled to great weight, from his large experience and the careful way in which he has made use of it. The following are the measures he recommends to be adopted:—

"1. An unusual supply of fresh air night and day throughout the hospital, all fear of draughts being disregarded.

"2. Regular nursing and feeding, and the use, when necessary, of the best Cognac brandy in addition.

"3. Prevention by morphia, if possible, of a second sleepless night, at whatever stage of the fever it may be threatened.

"4. The use of a combination of camphor and morphia in low delirium.

"5. The use of a combination of tartar emetic and morphia in wild delirium."

The author states his "conviction that if we received all our cases at the beginning, the proper mortality of typhus at the usual average of ages would be shown to be not more than 7 per cent."

The next paper is one of the longest and most valuable in the entire volume. It has for its subject, "The Diagnosis, Pathology, and Treatment of Progressive Locomotor Ataxy," and the name of its author, Mr. J. LOCKHART CLARKE, is a sufficient warrant for the importance of the statements it contains. Eleven cases are narrated in detail, each of much intrinsic interest, the perusal of which will well repay any one interested in the study of nervous affections. From the author's remarks on the diagnosis of this disease, we glean the following:—

"Strabismus, amaurosis, anæsthesia, and the so-called 'rheumatic' pains which frequently precede, for a great length of time, the unsteadiness of voluntary movement, are experienced in other disorders which differ essentially from locomotor ataxy. But nevertheless whenever any one of these affections supervenes, it should always suggest the possibility of it being a precursor of ataxy. . . . . In a large proportion of instances the strabismus is accompanied by amblyopia; and when it is single the amblyopia is on the corresponding side. . . . . The amaurosis of ataxy as regards its ophthalmoscopical appearance is unlike the amaurosis from disease of parts within the head. In amaurosis from intercranial disease the optic disk always shows evidences of recent or past neuritis, which is not the case in ataxy."—[Dr. Hughlings, *Lancet*, June 10, 1865.]

The author has found the test proposed by Trousseau not altogether satisfactory, and narrates a case (Case VIII., p. 92) to illustrate his objection. With regard to the etiology of locomotor ataxy, the author states that almost anything that depresses the nervous power may prove an exciting cause in those predisposed to the affection, but that of all such causes "a prolonged exposure to the combined operation of cold and damp

is by far the most common, as it is probably the most certain in its effects." In respect of treatment the author recommends that the whole of the body should be enveloped in flannel, with a lining of silk to the back of the flannel shirt. The diet should be wholesome and generous, with a moderate allowance of wine or beer. Should the appetite fail and strength and health be invaded, bark and iron, strychnia and cod-liver oil may be advantageously administered. Nitro-muriatic acid has been sometimes given with decided benefit. Silver in the form of the nitrate or the oxide, alone, or combined with opium, belladonna or cannabis indica, has been found of considerable service. Purgatives and dry cupping to the spine are frequently useful by relieving congestion. We regret that the author has disfigured this portion of his paper by writing (p. 103) "iodide of potash" instead of "iodide of potassium," or, if preferred, "hydriodate of potassa." Either of these would have been correct, but the expression in the text represents a chemical impossibility.

The author concludes this valuable paper with an account of the pathological anatomy of the disease in question, which we transcribe in full for the benefit of our readers.

"In the true locomotor ataxy the spinal cord is invariably altered in structure. Its membranes, however, are sometimes apparently unaffected, or are affected only in a slight degree; but generally they are much congested, and I have seen them thickened posteriorly by exudations, and adherent not only to each other, but to the posterior surface of the cord. Now, the posterior columns, including the posterior nerve-roots, are the parts of the cord that are chiefly altered in structure. This alteration is peculiar, and consists of atrophy and disintegration of the nerve-fibres to a greater or less extent, with hypertrophy of the connective tissue, which gives to the columns a grayish and more transparent aspect, and in this tissue are imbedded a multitude of corpora amylacea. Many of the bloodvessels that traverse the columns are loaded or surrounded, to a variable depth, by oil-globules of different sizes. For the production of ataxy it seems to be necessary that the changes extend along a certain length—from one to two inches—of the cord. The posterior nerve-roots, both within and without the cord, are frequently affected by the same kind of degeneration, which sometimes extends to the surface of even the lateral columns, and occasionally along the edges of the anterior. Not unfrequently the extremities of the posterior cornua, and even deeper parts of the gray substance are more or less damaged by areas of disintegration. The morbid process appears to travel from the centre to the periphery—that is, from the spinal cord to the posterior roots. In the cerebral nerves, on the contrary, the morbid change seems to travel in the opposite direction—that is, from the periphery towards the centres. From the optic nerves it has been found to extend as far as the corpora quadrigemina. With the exception of the fifth, seventh, and eighth pair, all the cerebral nerves have occasionally been found more or less altered in structure."

The next paper in the volume is on "Rheumatic Iritis," by Mr. JAMES ROUSE. The author proposes the name "Cylicotomy" for the operation heretofore known as Hancock's, and which Mr. Rouse classes with corneal paracentesis as useful in slight cases of intra-ocular tension, but not suitable to replace iridectomy in cases of recurring and chronic iritis. The author has found that the statement of German writers, that in syphilitic iritis the pupil is always displaced upwards and inwards, is incorrect. Mr. Rouse makes no mention of that peculiarly troublesome form of rheumatic iritis which seems to bear the same relation to the ordinary form that *gonorrhœal rheumatism* does to the idiopathic variety of that disease.

We have next a short paper, by the lamented TOYNBEE, upon "Cerebral Symptoms occurring in certain Affections of the Ear." Any force exerted

upon the malleolus and the outer surface of the membrana tympani passes inwards to the base of the stapes and to the contents of the vestibule; hence pressure upon the outer surface of the membrana tympani is tantamount to pressure upon the contents of the vestibule. The symptoms produced by such pressure are a sense of giddiness, an inability to walk straight, loss of distinctness of vision, and sometimes a feeling of numbness in the affected side of the head. To these may be added depression of spirits, independent of the mental discomfort produced by the accompanying deafness. The pressure requisite to produce these symptoms may be owing to the presence of cerumen or epidermis on the outer surface of the drum, the presence of a foreign body (cotton wool or an artificial drum for instance), a polypus on the outer surface of the same organ, or the forcible drawing inwards of the drum in cases of obstruction of the Eustachian tube. Giddiness and partial insensibility may likewise be produced by pressure on the inner surface of the membrana tympani, or by the application of too cold or too hot water to its outer surface. Several cases are given in illustration of these various conditions. The paper is a practical one, and contains hints that may profitably be borne in mind. As a case in point, we may instance one that occurred to ourselves in our last term of hospital service. A seaman was admitted to our wards with a severe scalp wound, laying bare but apparently not implicating the bone. The wound healed slowly, and about a fortnight after his admission he began to complain of dizziness, a dull pain in his head, and ringing in his ears. At the same time he became slightly jaundiced. These symptoms, with the previous history, looked serious, but the house-surgeon discovering a large accumulation of wax in either ear, a profuse syringing with warm water soon brought about a cure.

The ninth paper in our volume is by Mr. J. WARRINGTON HAWARD, "On some Points connected with the Treatment of Hernia." From Mr. Haward's essay we learn that 181 cases of strangulated hernia have been subjected to operation at St. George's Hospital within ten years. The importance of avoiding delay in these cases may be seen from the fact that of all these, those which recovered had had the bowel strangulated for an average time of thirty-nine hours, while in those that died the average time of strangulation had been seventy-five hours. The mortality after the operation was about 30.5 per cent. The author's remarks upon taxis and its adjuvants, especially the use of anæsthetics and ice, are practical and judicious. Nearly one-fourth of the entire number of deaths from strangulated hernia in St. George's Hospital have been distinctly referable to the forcible taxis used before their admission. In the operation, the surgeons of "St. George's" almost uniformly open the sac; in fact, the external operation known as "Petit's," has been practised but six times in 181 cases. The author argues well in favour of the operation by opening the sac; and if the surgeon were confined to but one mode of procedure in every case indiscriminately, Petit's operation should undoubtedly be rejected. But in fact no rule in this matter is universally applicable, and in a case where strangulation had existed but a short time, if the surgeon on reaching the sac should find that the bowel could by slight pressure be emptied and rendered perfectly flaccid, we can see no objection to the sac being returned unopened. In any case of doubt, however, the other plan would undoubtedly be the safer.

The author recommends in the after-treatment that the bowels should be kept at rest by means of opium for seven or eight days. We have found

it a good plan to give a full dose of morphia by hypodermic injection, before the patient has recovered from the anæsthesia induced for the operation.

With regard to the mooted question of the radical cure of hernia, the author considers the only operations worthy of any attention to be those of Prof. Wützer and Mr. Wood. Mr. Syme's operation, which the author does not even mention, has certainly the merit of greater simplicity than any other, and (though it has failed in our own hands), judging from published reports, has met with at least as much success. Dr. D. Hayes Agnew, of the Pennsylvania Hospital in this city, has devised an operation for the radical cure of hernia, which he has practised successfully in several cases, and which seems to us more philosophical than any other; we understand that it is his intention shortly to publish its details, with a full account of the cases in which it has been employed.

An interesting paper by Mr. HOLMES follows, upon "Hip-joint Amputations." The author narrates four cases in which this operation has been practised, one in a case of recurrent fibro-plastic tumour, and three in various conditions of hip-joint disease. In one of the latter, the operation was completely successful, and in the two others, as well as in the case of recurrent tumour, the amputation was undoubtedly the means of prolonging life. Mr. Holmes refers to the unsatisfactory nature of the statistics of this operation as hitherto collected, and states his conclusions in the following words, to which we most cordially agree: "Meanwhile, we must be content with the obvious fact that all amputations are dangerous injuries; and the amputation at the hip-joint so very much so that *it ought never to be resorted to unless there is no other chance of life.*" [The *italics* are ours.] The author believes hemorrhage at the time of the operation to be its principal danger, and points out the fact that, though the use of the abdominal tourniquet in a great measure obviates this difficulty, yet its employment is not unattended with disadvantages in the interference with the descent of the diaphragm, and the unavoidable pressure upon the important contents of the abdominal cavity. The second part of this paper, that upon amputation in morbus coxarius is, to our mind, the most valuable, as opening up the question of the propriety of this operation in cases to which it has been generally considered inapplicable.

The author's arguments are sound and well put, and his conclusion is, we think, unavoidable, that the operation is legitimate and desirable as a last resort either primarily, where the disease is too extensive to admit of excision, or secondarily, where excision has been practised and failed.

In a paper where there is so much to commend, it may seem invidious to find fault; but this is the special duty of the reviewer. The excellences of the paper are obvious to all, and we think it but right to call attention to two points, both of which may, however, be classed as omissions rather than as absolute errors. On page 154, Mr. Holmes says: "I am not able to refer to any case exactly analogous to the first of these three. I mean one where morbus coxarius has been treated by amputation as a primary measure, etc." Now, it so happens that the first amputation at the hip-joint ever done in Philadelphia was in a case of precisely this nature; we refer to Dr. Duffee's operation in 1840, the patient being a coloured girl, six years old, who, seventeen years later, was an inmate of the obstetric wards of the Philadelphia Hospital, her delivery being successfully effected, and the stump being then healthy and presenting a good cicatrix. This case has been pubished twice within ten years [Packard, *Am. Journ. Med. Sci.*,

July, 1857, and Morton, *Ibid.*, July, 1866]; and if English surgeons were as familiar with our literature as we are expected to be with theirs, this omission could not have occurred. The other point to which we have alluded is the author's remark upon his second case (p. 155), which proved fatal from abscesses in the brain. He says: "What the cause of the abscesses of the brain was I cannot form any opinion." We believe that cerebral abscess is a not very unfrequent termination in fatal cases of strumous suppuration whether connected with the joints or elsewhere. A remarkable case of this kind, where there was absolutely no history of pyæmia, so called, was reported by ourselves to the Philadelphia Pathological Society, and may be found in their published proceedings (Vol. II. p. 157).

These are but slight blemishes in a most valuable contribution to surgery. We think Mr. Holmes has conferred a benefit both upon the profession and upon humanity at large by indicating a means, hitherto not generally recognized, of saving life in a most distressing class of cases. The paper is adorned with two wood-cuts and a handsome coloured lithograph.

The next paper is one of thirty-two pages, by Dr. JOHN W. OGLE, "On Disease of the Brain as a Result of Diabetes Mellitus." The author refers to the numerous cases and experiments in which glycosuria has been the result of affections of the nervous system, and attempts to prove that in some instances this order is reversed, the diabetes being the cause of the brain affection. A case is related at considerable length in which, after diabetes had existed for several years, paralysis came on, first of one side and afterwards of both, the patient dying, and the autopsy revealing fibrinous clots in both middle cerebral arteries, with corresponding regions of cerebral softening. The author believes that the diabetes caused the brain softening, and that this in time gave rise to the arterial obstruction. Unfortunately for the absolute perfection of his theory, however, he has mentioned in the clinical record of the case a very significant phenomenon which is left without any explanation in the account of the post-mortem appearances. We refer to the development of what are called "two peculiar and very painful lumps . . . in the tissues of the right leg, one being in the thigh and the other in the calf. They were of about the size of a walnut and exceedingly tender when pressed upon, and appeared as if situated in the muscular substance of the joint, and they produced great discomfort in walking."

Both of these mysterious "lumps" disappeared in a few months, one of them returning, however, about two weeks before the first paralytic seizure, and not being entirely absent during the remainder of life. Now we are left completely in the dark as to the nature of these "lumps," but it appears to us that there is here at least a *possible* history of strumous abscesses connected or not with the joints, thrombosis, embolism, and secondary softening of the brain, the whole sequence of events having no *necessary* connection with the diabetes from which the patient had been previously suffering. The cessation of the glycosuria coincident with the onset of the cerebral symptoms has, it seems to us, no *peculiar* significance, as this has been frequently observed (as stated by the author himself, pp. 166 and 186, n. 25) in connection with the supervention of acute disease in other parts of the body.

This paper, which, although we do not think it conclusive, is nevertheless interesting and ingenious, contains the *post-mortem* records of fourteen cases of diabetes which proved fatal at St. George's Hospital. A little more care in the proof reading of these records would have been desirable.

Thus, at the foot of page 176, one or two lines have dropped out bodily; while the first line of page 177 gives us the rather startling *post-mortem* note that "both *legs* (sic) contained much (so-called) scrofulous deposit and several vomicæ."

The next paper, by HENRY BENCE JONES, M. D., on "Jaundice and Biliousness," is quite short, but pregnant with careful observation and reasoning. The common idea, that jaundice is produced by defective action of the liver is entirely erroneous, for if the liver ceased to act, though serious blood poisoning would result, as no bile could be formed, neither jaundice nor "biliousness" (which is, as it were, a first stage of jaundice) could ensue. Jaundice is due to exosmose from a distended gall-bladder, just as uræmia, properly so called, finds its cause in a distended urinary bladder or retention of urine. For the more serious conditions produced by the *suppression* of bile or urine, Dr. Jones proposes the names of *cholegenous* and *urinogenous* poisoning respectively. This explanation being premised, we have four different kinds of jaundice and of biliousness, to wit: (1.) Mechanical jaundice, or jaundice from obstruction; (2.) Catarrhal jaundice, or jaundice from catarrh of the duodenum; (3.) Chemical jaundice, or jaundice from suboxidation; and (4.) Nervous jaundice, or jaundice from excessive production of bile. The paper concludes with a brief indication of the treatment to be adopted in each of these several varieties.

We have next a short practical paper upon Paralysis occurring in childbed. The author, Dr. E. F. FUSSELL, recognizes five probable causes for this curious affection; these are: (1) Undue pressure in the act of delivery; (2) Reflex paralysis from uterine irritation; (3) Central exhaustion of the cord (a term borrowed from Dr. Gull's papers in *Guy's Hospital Reports*); (4) Blood-poisoning, frequently attended with albuminuria; and (5) Embolism, whether from a heart clot formed during profuse hemorrhage, or from the detachment of a portion of the venous clot in cases of milk-leg.

In one of the cases narrated, there is a suspicion that the paralysis may have been diphtheritic, the patient having lost a child from diphtheria but two weeks before her confinement. The prognosis of puerperal paralysis is happily favourable. The patients generally recover entirely, though after a variable interval.

Following Dr. Fussell's paper is one in rather an excited tone by Mr. CHARLES HUNTER, upon the "Modus Operandi of Hypodermic Injections." The moving cause for this paper appears to be that Dr. La Ségue, in a critical review upon subcutaneous medication, published some months since in the *Archives Générales de Médecine*, doubted the correctness of Mr. Hunter's views as to the want of superiority of local injections over those performed at a distant point in cases of neuralgia. The author appears to us to have gone somewhat out of his way to throw discredit upon the observations of Messrs. Mitchell, Morehouse, and Keen, of this city, as published in the number of this Journal for July, 1865. We suppose that no one would be disposed to question the fact that hypodermic injections produce marked effects upon the general system, effects obviously induced by means of absorption; at the same time, we think it doubtful whether any one, who, by experiment, has honestly convinced himself of the superiority of localized injections in cases of neuralgia, will be induced to change his views from the fact that Mr. Hunter thinks differently.

This paper is succeeded by a very short one by Mr. BRODHURST, on "Congenital Dislocation of the Thigh Bone." In all the cases observed the displacement was upward and backward; and it is believed by the author that

all these cases are produced by undue traction on the part of the accoucheur in breech presentations or by violent uterine contractions in the process of delivery. If seen during the first two years of life, reduction can generally be effected and maintained; but, after this age, the absorption of the lip of the acetabulum will have progressed so far that mechanical contrivances must be employed to retain the head of the bone in its proper place. Mr. Brodhurst recommends, in such cases, division of the trochanteric muscles (subcutaneously, of course) and the subsequent use of a straight splint, with extension. A case is given where this operation was practised with a completely successful result.

Dr. WILLIAM OGLE contributes a paper "On the Diurnal Variations in the Temperature of the Human Body in Health." This is an important subject, as it is evidently necessary to be acquainted with the changes of animal temperature occurring in a normal state in order properly to appreciate the modifications brought about by disease. Dr. Ogle's observations were made upon persons of either sex and continued during a considerable period, every precaution being apparently taken to eliminate sources of error. The general conclusions at which the author arrives are as follows:—

"α. The temperature of the internal organs is at its minimum about 6 A. M. After this there is a rise, which, under such conditions of life as I have described, reaches its maximum late in the afternoon. Then a fall begins, which lasts to 6 A. M. again.

"β. The range within which the ordinary diurnal fluctuations occur is not of greater extent than about 1½° Fahr.

"γ. The greater part of the rise is due to the combined influence of exercise and food.

"δ. Exercise causes a considerable rise, whenever taken.

"ε. Food causes a rise, which is most marked after breakfast, less so after lunch, and which is reduced after dinner to a mere retardation of the fall which without it would occur.

"ζ. Alcohol (or rather claret) causes an immediate rapid fall. But this effect is temporary, and a reaction ensues by which the temperature is carried to as high a point or even higher than it would have reached had no alcohol been taken. Tea, on the other hand, causes an elevation of temperature.

"η. The internal temperature varies with that of the external medium; but the small variations which occur in the air in the course of twenty-four hours scarcely produce appreciable results on our internal warmth.

"θ. There is a rise in the early morning while we are still asleep, and a fall in the evening while we are still awake, which cannot be explained by reference to any of the hitherto mentioned influences. They are not due to variations in light; they are probably produced by periodic variations in the activity of the organic functions.

"ι. The organic functions like those of animal life, have their period of repose; but their repose is less perfect, and begins and ends earlier."

Next comes a paper "On Rupture of Arteries Dependent on External Injury," by Mr. POLLOCK. The diagnosis of arterial from venous rupture in cases where no external wound permits a close examination, may be made from the more diffused nature of the swelling in the former case and from the much greater tension and hardness of the integuments. In rupture of a large artery, such as the femoral, there would be also immediate constitutional disturbance from the profuse extravasation of blood—an actual hemorrhage though no blood should escape externally. After rupture of the femoral or popliteal artery gangrene invariably follows, and amputation, if it has not been performed primarily, will become necessary as a secondary operation. The author narrates two cases, and analyzes eight others re-

ported by Mr. Poland (*Guy's Hospital Reports*, 3d S. vol. vi.); his conclusion being that in the lower extremity amputation should be performed at once if the condition of the patient will permit, while in the upper extremity it would be proper to delay this extreme measure until the occurrence of gangrene should render its necessity evident.

Mr. Pollock's paper is manifestly the production of a judicious practical surgeon, and confirms the good opinion we had derived from his contributions to *Holmes' System of Surgery*.

Dr. W. H. DICKINSON contributes five cases of clots occurring in the cerebral arteries, in which the evidence derived from *post-mortem* inspection went to show that the coagula were formed in their positions during life, and were not cases of embolism. The author points out that coagulation of the blood during life may depend upon any one of three conditions, or upon a combination of some or all of the same. These conditions are (1) the character of the blood itself, (2) the rate at which it moves, and (3) the nature of the surfaces over which it flows. In the cases reported by the author there was retardation and embarrassment of the circulation due to previous disease of the heart (mitral contraction in four out of the five cases) and the peculiar circumstances under which the fatal illness was first manifested. Dr. Dickinson might have added that the anatomical peculiarities of the arteries that supply the brain, their tortuous course and their passage for some distance through bony walls, render them particularly liable to become the seat of clot formation, as well as to furnish a resting place for emboli, whether arising from cardiac disease or from other causes.

Two papers follow, which we may consider together, by Mr. BRODHURST on Talipes Varus, and by Mr. NAYLER on Talipes Equinus. Mr. Brodhurst's remarks occupy but two pages, and from them we learn that twenty-two cases of congenital varus have been treated in St. George's during the past two years. The tendons divided have been the tibialis anticus, tibialis posticus, and tendo Achillis in all cases, with division of the plantar fascia and tendon of the flexor longus digitorum in severe cases as well. Splints, bandages, and Scarpa's shoe have been subsequently employed, and the importance of passive motion, friction, and galvanism in the after-treatment are particularly insisted on.

Mr. Nayler's paper is much more elaborate, and is accompanied by seven excellent wood-cuts. Mr. Nayler has observed 450 cases of club-foot, of which 169 belong to the class designated as talipes equinus, 86 of these being in males and 83 in females. Of 153 cases, in which it was noted, 41 were of the right foot only, 77 of the left only, and 35 of both feet. The author considers systematically the pathology, causes, complications, prognosis, and treatment of equinus, and has thus, we think, made a valuable addition to the literature of the subject. This form of club-foot, the author states, is rarely, if ever, congenital, and is frequently acquired late in life from various diseases or injuries of the leg or thigh, or even as an accompaniment of hysteria. We have long been familiar with a form of pes equinus not unfrequently met with after fractures or wounds of the lower extremity—the condition sometimes referred to as "pointed toe." We believe this to be entirely the result of carelessness on the part of the patient or the surgeon, and that it can always be avoided by keeping the limb in a straight direction, and watching carefully the position of the foot. Many hundreds and probably thousands of soldiers were discharged from service or invalided during the late rebellion for "deformities following gunshot wounds" when simple attention to the position in which the injured

limb habitually lay, would have enabled them to be returned to their regiments able to march and to fulfil the entire duties of a soldier.

We have seen this deformity resulting from the careless use of Smith's anterior splint in cases of fracture of the lower extremity, and the frequent occurrence of the same malposition when the double-inclined plane is employed, forms one of the strongest arguments in favour of the limb being uniformly placed in the straight position.

With regard to treatment, we observe that Mr. Nayler seems more sparing in the use of tenotomy than Mr. Brodhurst.

We come next to an elaborate paper by Mr. HOLMES "On the Amputation Book of St. George's Hospital." This is an extremely important contribution to practical surgery, and is deserving of high praise as well for the amount of information it conveys as for the convenient and available manner in which that information is communicated. The recorded histories of not less than three hundred major amputations are analyzed, with many interesting particulars as to the nature of the injury or disease which rendered operative interference necessary, and the course and after-treatment of the cases. These 300 amputations have been done in 14 years, and embrace three at the hip-joint, three at the knee-joint, and three at the shoulder-joint respectively; all of the hip-joint recovered, two of the knee and as many of the shoulder. There were two "double amputations," one doing well and the other dying on the twelfth day. The youngest patient subjected to amputation was a child of three years (amputation of the arm for a burn, successful), and the oldest a woman aged eighty-one, who died from causes apparently unconnected with the operation on the thirty-eighth day.

The whole paper is so condensed (though occupying as many pages as almost any in the volume) that we must resign the hope of furnishing an abstract of its contents, merely quoting the author's conclusions upon the two points to which his inquiries have been particularly directed, and referring our readers to the paper itself for the grounds on which those conclusions are based. The first portion of the paper has for its object to ascertain the influence of age on the prognosis of amputation, and the author finds that "the risk of amputation is constantly rising throughout life, and at any given period after thirty years of age the risk is more than twice as great as it was at the same period after birth."

With regard to the *causes of death after amputation*, which are investigated in the second portion of the paper, the author's conclusions are as follows:—

"1. That a considerable proportion of cases must occur in hospital practice in which death is really inevitable, although it is not known to be so at the time of amputation, and that these cases ought to be excluded in estimating the mortality of the operation, as having no bearing on the question.

"2. That of the fatal cases which remain, in about one-half, death is due mainly to previous disease or injury.

"3. That secondary hemorrhage is hardly ever a cause of death except in persons with diseased arteries.

"4. That death from exhaustion hardly ever occurs without previous disease, obviously proved both by symptoms and post-mortem appearances.

"5. That the other hospital affections (erysipelas, diffuse inflammation, and phagedæna or hospital gangrene) are rare in subjects previously healthy, and that, as a rule, they only prove fatal when they are the precursors of pyæmia.

"6. That therefore any attempt to estimate the dangers of amputation in hospital practice, or to diminish its mortality, must be based upon a knowledge

of the conditions under which pyæmia occurs in cases treated separately, and in patients congregated in hospital wards.

"Hence the necessity for some careful method of studying the condition of the wards and of the atmosphere of the wards in various states of weather, and at various times of the day and night. It is only by a long series of observations of this nature that the assertions which have been put forth with regard to the origin of hospital diseases from germs present in the air, or deposited on the walls or furniture of the wards, can be verified or refuted."

The *dentistry* of St. George's Hospital is represented by statistical tables compiled by Mr. VASEY. The dental case-books of the hospital have been kept for eight years, and embrace the records of 14,046 cases of extraction. These are arranged by Mr. Vasey under the following headings: (1.) The number of teeth extracted in the different months of the year, permanent teeth being separated from the temporary, and the number of each in either sex. (2.) The various classes of teeth, and the number of each class. (3.) The number of permanent teeth extracted of each class. (4.) The number of permanent teeth extracted at various ages, and (5.) The number of teeth extracted through caries and other causes.

The annual reports of the Medical and Surgical Registrars, with the advertisement of the Hospital School, conclude the volume. These reports are prepared with great care, and convey an immense amount of information in a very condensed form. Any attempt to analyze them would necessarily be a failure, and we shall therefore content ourselves with extracting for our readers' benefit a few items which have struck us as being of more than ordinary interest.

The medical report is prepared by Mr. STURGES, the registrar for 1865, with the assistance of Dr. THOMPSON, his official successor. From this we learn that nearly 1700 patients have been admitted to the medical wards during 1865, the mortality, in round figures, being one-eighth of the entire number. Three cases of acute rheumatism proved fatal during the year, the autopsies showing cerebral embolism from heart-disease to have been the fatal lesion in two of these. With regard to the propriety of receiving hysterical patients into hospital, we quote the following, which entirely coincides with the result of our own experience: "As a rule, it may be said that cases of hysteria derived no benefit from treatment in the hospital."

A case of ascites from cirrhosis of the liver with great enlargement of the spleen had a fatal termination from accidental puncture of the epigastric artery in the operation for paracentesis.

A table is given showing the mortality of certain diseases during a period of ten years: The percentages of deaths were as follows:—

Continued fever 11.6 per cent.; scarlatina 10.4 per cent.; erysipelas 14.2 per cent.; chorea 1.8 per cent.; delirium tremens 20.8 per cent.; and tetanus 60 per cent.

A case of hydrophobia, proving fatal on the day of admission, and nearly two years after the patient had been bitten by an apparently healthy dog, is narrated in detail, but unfortunately not accompanied by any account of the post-mortem appearances.

From the much longer report of the surgical registrar, Mr. PICK, we glean the following. The first dressing for burns and scalds has been generally the ordinary calamine cerate, the parts being then swathed in cotton wool.

The trephine was used in two cases of fractured skull, death following in

one on the second day, and in the other in about two weeks; in the latter the symptoms of compression had been relieved, and the patient died from pyæmia.

A curious case of vicarious menstruation was observed in an hysterical girl of nineteen years, the discharge taking place for three or four days at each catamenial period, from a wound of the forearm received four years previously.

A case of fracture of both clavicles and the sternum recovered without deformity, having been treated by position alone, without any apparatus.

Fractures of the patella were treated successfully with Malgaigne's hooks, the clamps being fixed in turns of strapping previously made to surround the limb above and below the broken bone.

Fifty-one cases of well-marked hospital gangrene occurred during the year, and the experience of the hospital tends to show that the causes of this frightful disease are not altogether those usually assigned, such as overcrowding, bad ventilation, etc. This coincides with our own experience; some of the worst cases of hospital gangrene which were seen at the Cuyler Hospital, during our official connection with it, having occurred among those soldiers who, having homes in the neighbouring village, were permitted to live out of the hospital, reporting from time to time to have their wounds examined and dressed. Local treatment does not seem to have occupied particular attention at St. George's Hospital, but the free use of opium and alcoholic stimulus is especially recommended.

In several cases of necrosis, a wash of equal parts of sulphuric acid and water was applied to the exposed bone, with the effect of rapidly dissolving it, leaving a healthy surface which soon cicatrized.

A case of tumour connected with the scapula required the excision of the greater portion of that bone, the risk of hemorrhage being greatly lessened by compression of the subclavian artery during the operation, and by beginning the detachment of the mass at its posterior edge. A case of malignant disease of the lower end of the femur was mistaken for popliteal aneurism, the femoral artery being tied, and the true nature of the disease not being discovered until after the patient's death, which ensued on the twentieth day, from pyæmia.

The use of the actual cautery, lightly applied at a red heat, is recommended in cases of synovitis.

Three cases of aneurism were admitted during the year. One, of the subclavian and inhominate arteries, was greatly benefited by medical treatment alone. For an aneurism of the femoral artery at the groin, the external iliac was tied with a silver wire, death ensuing on the third day, from bronchitis. The femoral artery was successfully tied with a silver wire in a case of popliteal aneurism where pressure and forced flexion had failed of good result, the wire remaining in the limb without any inconvenience to the patient.

Thirty cases of strangulated hernia were received, the taxis being successful in fourteen, and herniotomy being practised in the remainder, with eleven recoveries and five deaths; one of the successful cases was of umbilical hernia in a male.

Dupuytren's operation for artificial anus was employed in the case of an infant of thirty days, the abnormal openings being in a protrusion through the umbilicus; the child died on the tenth day, from peritonitis. Peritonitis also proved fatal, on the third day, after lumbar colotomy in a case of complete occlusion of the rectum from malignant disease.

Lithotomy was performed three times, all successfully. In one case the incision was made upon a grooved lithotrite instead of the ordinary staff, the intention being to protrude the calculus through the perineal wound by reversing the position of the instrument; this was, however, found impossible on account of the size of the stone (which weighed over four ounces), and the operation was concluded in the usual way.

A cystic tumour of the male breast was removed by operation, the patient dying from exhaustion caused by sloughing and secondary hemorrhage.

Ovariotomy was performed twice—once successfully, and once with death in forty hours; and a fibrous tumour of the uterus was removed in the belief that it was ovarian, the bowel being ruptured in tearing through some adhesions, and the woman dying three hours after the operation.

Excision of the hip was done twice, in both cases with very good results; of the knee, four times, with two recoveries and two deaths; of the elbow, four times, with two recoveries and two deaths (one, an excision for compound fracture, traumatic gangrene necessitating secondary amputation); and of the wrist, once, with a not very satisfactory result.

Twenty-eight amputations for all causes were done during the year, of which thirteen died. Two at the hip-joint recovered, and one at the shoulder-joint died. Of the entire number, seventeen were for disease, and only eleven for injury.

The reports of either registrar are concluded by valuable statistical tables.

We cannot terminate this review without congratulating the editors, Messrs. Ogle and Holmes, and the publishers, Messrs. Churchill, upon the very valuable and elegant volume they have presented to the profession. Several of the papers—notably Mr. Clarke's on locomotor ataxy, and Mr. Holmes's on amputations—are of unusual excellence, and we doubt not will hereafter become classical; while all, with one or two exceptions, are decidedly above mediocrity. The volume is well printed and well illustrated, and gives promise of a series of unsurpassed interest and importance. Let us hope that in future volumes the editors will append an exhaustive index to the text (as in the reports of the London Hospital), and thus greatly enhance the usefulness of the work as a book of reference.

J. A., JR.

BIBLIOGRAPHICAL NOTICES.

ART. XX.—*Surgical Observations, with Cases and Operations.* By J. MASON WARREN, M. D., etc. 8vo. pp. xvi. 631. Boston: Ticknor & Fields, 1867.

THERE are two distinct ways in which a surgeon, who has seen and observed a great variety of cases, and who has made himself eminent in more than one special branch of surgical practice, may record the information, which he has acquired by assiduous improvement of unusual opportunities, for the benefit of his contemporaries and successors, and especially of those whose lot has been cast in obscurer regions, and who have rarely met with individual cases which their teacher, in his wider field, has seen in groups and in frequent recurrence.

The first method is by means of text-books or systematic treatises; the second through volumes such as that before us, which, if permitted to designate by a word not often used, we might appropriately call a "polygraph."

A good text-book is probably more generally read, and adds more to its author's reputation, for the time being, than any other form of publication; but, by their very nature, text-books, in a more or less brief period, become out of date, and are replaced by new treatises on the same subjects. Hence, we think Dr. Warren has done wisely in presenting his claims to posthumous as well as contemporaneous fame in the manner he has adopted; for, let the progress of surgical science in the future be what it may, the "cases and operations" which form the subjects of his "surgical observations" will remain both instructive and interesting, though our theories of pathology should be revolutionized, and our present methods of treatment abandoned and well-nigh forgotten.

In a short prefatory note the author modestly states that his work "contains some results of surgical experience," and the reader must make himself familiar with the contents of the book itself, before he can form an adequate idea of the great extent of that experience and the practical importance of the results thence obtained. The volume contains fourteen chapters, and is illustrated with six plates (three of them coloured) and thirteen woodcuts. The first ten chapters are on injuries and surgical diseases of the head, the face, the neck, the chest, the abdomen, the anus, the genito-urinary organs in either sex, the extremities, arteries and veins, and nerves; the eleventh chapter treats of tumours; the twelfth, of gunshot wounds; the thirteenth, embracing a number of miscellaneous cases not included under previous headings; and the fourteenth and last, containing a short but perspicuous account of the introduction of anæsthesia, both general and local, into surgical practice.

To attempt an analytical review of Dr. Warren's magnificent volume would be to undertake an impracticable task; for the immense variety and importance of the subjects discussed would require almost a textuary reproduction. Dr. Warren gives the details of no less than three hundred and seventy-three cases, the history of each conveying some practical lesson, and the range of subjects embracing almost every recognized operation from the simple extraction of a bullet to excision of the knee-joint and amputation at the hip.

A number of the more important cases have already been published, at different times, in this Journal or the medical journals of Boston, and the author has long been widely known as one of the most able and skilful surgeons of America. Till the appearance of the present volume, however, there has been no opportunity afforded of estimating the great amount of excellent surgical work which Dr. Warren has performed, and we are sure that our readers will share with us a feeling of national pride at the admirable record which is here presented.

In carefully reading Dr. Warren's book, we had marked a large number of passages which seemed to us to call for special commendation, and a few (very few) in which we detected slight omissions or verbal inaccuracies. But, on further consideration, it has seemed best to present to our readers the claims of the volume as a whole, without entering into any minute details of criticism, and to point to it as a monument—*ære perennius*—of a professional life, which has already passed beyond the quarter of a century, spent in the constant and conscientious relief of human suffering; and as a bright beacon of encouragement and hope to all that come after in the surgeon's laborious but self-recompensing career.

Dr. Warren's volume will naturally provoke a comparison with similar works which have appeared from British surgeons within the last few years, and more especially, perhaps, with the enormous volume published by Mr. Butcher, of Dublin. May we be excused the expression of a natural gratification that the work of our fellow-countryman is throughout written with a dignity and self-respecting modesty that was not uniformly characteristic of the labours of the great surgeon of Ireland?

We do not recall in Dr. Warren's six hundred pages a single expression that we could wish expunged or even modified, and the correction of a few verbal mistakes and the rearrangement of one or two slightly obscure sentences, which will doubtless be done in a second edition, will render the work, in our judgment, as nearly perfect of its kind as can be expected of surgical humanity.

Of the publishers' share in the work of Dr. Warren we need only say that the mechanical execution of the volume is worthy of its contents.

J. A., Jr.

ART. XXI.—*Reports of American Hospitals for the Insane.*

1. *Of the Pennsylvania Hospital for the Insane, for the year* 1866.
2. *Of the Western Pennsylvania Hospital, for the year* 1866.
3. *Of the Eastern Asylum of Virginia, for the fiscal year* 1865–66.
4. *Of the West Virginia Hospital, for the years* 1864, 1865, *and* 1866.
5. *Of the Eastern Asylum of Kentucky, for the fiscal year* 1865–66.
6. *Of the Western Asylum of Kentucky, for the year* 1866.
7. *Of the Northern Ohio Asylum, for the fiscal year* 1866.
8. *Of the Southern Ohio Asylum, for the fiscal year* 1865–66.
9. *Of the Illinois State Hospital, for the fiscal years* 1864–65 *and* 1865–66.
10. *Of the Insane Asylum of Louisiana, for the year* 1866.

1. THE principal numerical results derived from the medical history of the *Pennsylvania Hospital for the Insane*, for the year 1866, are as follows:—

	Men.	Women.	Total.
Patients in hospital, January 1, 1866 . .	153	151	304
Admitted in course of the year . . .	110	112	222
Whole number	263	263	526
Discharged, including deaths	115	115	230
Remaining, December 31, 1866 . . .	148	148	296
Of those discharged, there were cured . .	47	55	102
Died	17	16	33

"Of these deaths, ten resulted from acute mania; nine from organic disease of the brain (generally terminating in an apoplectic attack, and this year all being men); two from pulmonary consumption; three from old age; one from typhus fever; two from disease of the heart; one from epilepsy; and five from the gradual exhaustion of chronic insanity, attended, as it so often is, by defective nutrition."

When treating of the supposed causes of mental alienation, as illustrated by all the cases hitherto received at this hospital, Dr. Kirkbride says:—

"Three hundred and ten males, and twenty-four females, are reported as

having their insanity caused by intemperance. That intemperance is steadily on the increase in both sexes and with all classes of people, there can hardly be a question. It is indeed rapidly becoming the great vice of our age and country, giving to the criminal courts the largest share of their business, filling up the wards of our hospitals and other charitable institutions, crowding our almshouses, and blighting the fairest hopes and brightest anticipations of whole families in every walk of life. In its immediate and secondary results it assumes an importance that can hardly be overestimated. * * * If it may be called a disease, intemperance is really a most intractable one. It is infinitely more difficult to manage than insanity, and although the latter has often (incorrectly perhaps) been called the greatest of human afflictions, intemperance is not a less serious one. The curability of insanity, when promptly and properly treated, is more than 80 per cent., while every one knows that cases of intemperance would present a much less favourable record; and as regards relapses, while in insanity they are only occasional, with the intemperate they are of extremely common occurrence."

The doctor thinks that one cause of the increase of intemperance is "the familiar use of stimulants for nervous feelings." As a check upon this, it is his opinion that "stimulants that are given to nervous patients should come from the apothecary; like other medicines, they should be combined with ingredients that would somewhat disguise their true character, and they should be taken in measured quantities and at fixed times, as other liquid medicines are commonly given. It may not be necessary to have the bottles from which they are taken labelled "Poison," but it should be very clearly understood that the contents are of a character that can be used safely only under the direction of the physician, who should himself feel all the great responsibility he assumes in their frequent prescription."

As the chapel and the lecture-room are becoming more and more *a power* in the treatment of the insane, we extract from this report a paragraph which shows the extent to which that power is employed in this hospital:—

"For the first time, I am able to report that at the Department for Females every evening in the week is now provided with some means of breaking up the monotony of the wards formerly so universal in institutions for the insane. It is not many years since the listless condition of the patients in their badly lighted halls, without any means of passing the dreary hours that came upon them every day between their evening meal and bedtime, was certainly one of the saddest sights witnessed in too many of these establishments. In this hospital, of the seven evenings of the week, for nine months of the year, one is now devoted to reading of the Bible and sacred music; three to lectures, exhibitions of dissolving views with music, or concerts, in the lecture-room; two to light gymnastic exercises, with music, in the new hall put up expressly for that purpose; and one to tea-parties at the resident officers' apartments, and at which all the officers are generally present. These last are composed of as many patients as the dining-room will accommodate, and the Matron's weekly parties have now become one of the regular means of passing our evenings."

In allusion to the insufficiency of hospital accommodations in Pennsylvania, Dr. Kirkbride says:—

"Another State institution for the insane cannot be provided too soon; there are those now suffering from the want of it in numbers quite sufficient to fill every ward, were it ready to-day; and it can hardly be that any tax-payer of moderate intelligence, who carefully calculates his own share of the expense, would object to such an employment of a portion of the funds of the commonwealth. If they did not directly benefit some one of his own household, sooner or later they certainly would that of some neighbour, who would receive a relief that would cause him ever to think gratefully of his government, whose acts of beneficence should always redeem it from the common charge of thinking only of political interests, and of being governed solely by selfish influences."

2. "During the entire year," says the report of the *Western Pennsylvania Hospital* for the year 1866, "the institution has been crowded to excess, and it has been with great difficulty, at times, that many of the patients who arrived

could be furnished with comfortable quarters. This excessive crowding of the various wards of the hospital has resulted, as every violation of hygienic laws will do, in a deterioration of health, and an increased bill of mortality. * * * Another year will, in all probability, bring with it partial relief from our present condition, by the finishing and furnishing of the western extension to the hospital, and will find the institution better prepared to meet the rapidly increasing demand on its resources for the cure or amelioration of the insane of Western Pennsylvania."

	Men.	Women.	Total.
Patients in hospital, January 1, 1866 . .	111	93	204
Admitted in course of the year . . .	76	59	135
Whole number	187	152	339
Discharged, including deaths	69	64	133
Remaining, December 31, 1866 . . .	118	88	206
Of those discharged, there were cured . .			50
Died			39

"Six deaths were caused by consumption, six by old age, four by dysentery, two by exhaustion of chronic mania, two by chronic enteritis, one by exhaustion of acute mania, two by paralysis, four by diarrhœa supervening in cases of chronic mania, two by diarrhœa in cases of acute mania, one by gastritis, two by erysipelas, one by pericardial dropsy, one by cholera morbus, one by apoplexy, one by peritonitis caused by obstruction of biliary ducts, one by acute mania complicated by enteritis established before admission by severe medication, one by typhoid fever, one (a case of melancholia) from persistent refusal of food."

In reference to one of the patients who died, Dr. Reid says: "His condition when admitted was that of complete exhaustion, and how well the attempt, to use the language of his physician, 'to reduce him to a shadow, by bleeding, low diet, purgation, and salivation' (which was practised before he was placed in the hospital), succeeded, and how utterly impossible it was 'to build up a new structure,' the preceding statement reveals."

This reminds us of years that have gone, the years of battle against the lancet.

In this report, as in one emanating from the same source in a former year, the practice of committing insane criminals to the ordinary hospitals is condemned, and the method of avoiding it discussed. "The erection," says Dr. Reid, "of a 'Criminal Lunatic Asylum,' in a part of the State easy of access, into which all that class might be collected, and placed under the care of proper officers, is suggested, or, if thought preferable, *hospitals might be erected in connection with the prisons*, where, from the prison physician and other officers, they would receive all the care and treatment that could be extended to them in a distinct establishment.

"If this latter plan should be adopted and carried out, the expense of maintaining a separate institution, as well as the cost and excitement of their removal from and perhaps back to the prison would be avoided, and all attempts at *feigning insanity* to accomplish a discharge or transfer would be certainly precluded."

3. Robert M. Garrett, M. D., was appointed by the Board of Directors as Superintendent of the *Eastern Lunatic Asylum*, at Williamsburg, Virginia, and entered upon the duties of his office in March, 1866. The report of the institution for the year ending September 30, 1866, is signed by him.

He says: "On the retreat of the Confederate forces, under General Johnston, from the peninsula of Virginia, and its occupancy by the army of the Potomac, under command of General McClellan, the Eastern Lunatic Asylum, in May, 1862, passed into possession of the military authorities of the United States. His Excellency the governor of Virginia, in the midst of civil strife, alive to the call of humanity, provided for the comfort of the unfortunate lunatics by forwarding to them funds and a medical supervisor. It was not, however, until some time after the cessation of the late war that the present reorganization was effected."

The establishment was restored to the authorities of the State of Virginia on the 1st of November, 1865.

	Men.	Women.	Total.
Patients in hospital at that time	84	91	175
Admitted to September 30, 1866	31	31	62
Whole number	115	122	237
Discharged, including deaths	19	12	31
Remaining, September 30, 1866	96	110	206
Of those discharged, there were cured	4	5	9
Died	9	6	15

Of the whole number of patients in the course of the year, the insanity of 18 men and 20 women, total 38, is attributed to "the war."

Thirty-five of the patients, 16 men and 19 women, are coloured persons.

From Dr. Garratt's brief report we make the following extract:—

"That the late events which have transpired in our country have added largely to the list of the insane, I cannot doubt. Many recent cases received here are clearly to be traced to the excitement, deprivations, and horrors of the late war, and many more will be added to the list. It is safe to calculate that, before this time next year, this asylum will be much crowded, if not filled to overflowing. It is our intention to accommodate the largest possible number; not only as a matter of duty, but as a measure of economy to the State, so as to prevent the necessity of either enlarging this institution, or of building another."

4. It is several years since the preliminary measures were taken, and a legislative act was passed, for the erection of a hospital for the insane in West Virginia. It was decided to place the new institution in the town of Weston. "The south one story wing" of the building having been completed, the hospital was opened on the 22d of October, 1864, under the superintendence of Dr. R. Hills, well known for his successful management of the Central Ohio Hospital for the Insane.

The first annual report of the *West Virginia Hospital for the Insane* is dated a little more than two months after the opening, and at the close of the calendar year just mentioned. The number of patients received up to that time was 21, of whom 6 were men and 15 women; and no one had been discharged.

In allusion to the building, the report says: "We have here the beginning of a most substantial and magnificent hospital for the insane, unsurpassed, so far as constructed, by any other one anywhere, and should it be completed in like manner, it would be one of which not only the State, but the nation might be proud."

From the second annual report we extract the general medical statistics for the year 1865.

	Men.	Women.	Total.
Patients in hospital January 1st	6	15	21
Admitted in course of the year	22	14	36
Whole number	28	29	57
Discharged, including deaths	9	8	17
Remaining, December 31st	19	21	40
Of those discharged, there were cured	5	3	8
Died	1	2	3

"The three deaths were all of them sudden, two of them from epilepsy, and one from apoplexy."

Progress was made, in the course of the year, in the erection of a barn, and in the "extension of the heating apparatus." Dr. Hills recommends the purchase of more land, and the resumption of the construction of other sections of the hospital.

The third annual report, in consequence of a change of time for the expiration of the official year, embraces only the first nine months of the calendar year 1866.

	Men.	Women.	Total.
Patients in hospital, January 1, 1866 . .	20	20	40
Admitted in nine months	6	8	14
Whole number	26	28	54
Discharged, including deaths	4	7	11
Remaining, September 30, 1866 . . .	22	21	43
Of those discharged, there were cured . .			6
Died			4

There were eighty applications for admission, but only fourteen could be received, as all the room was occupied. Another section of one wing has been begun. This report is almost wholly devoted to the material interests of the establishment.

5. In their report for the official year ending with September 30, 1866, the Board of Managers of the *Eastern Lunatic Asylum*, of Kentucky, recommends:—

"1. The purchase of more land for the asylum.

"2. The erection of another building capable of holding two hundred patients.

"3. Provision for insane negroes."

Dr. Chipley, in his report, portrays at considerable length the necessity of enlarging the buildings, and the advantages which would accrue from such enlargement. In regard to the third recommendation of the managers, he says: "The Legislature has already indicated its purpose to make some provision for insane negroes. * * * Already applications for the admission of coloured persons are multiplying, and no provision has been made for their relief. * * * In my report for 1857, I submitted the propriety of providing for the relief of this class of persons. Such provision is more imperatively demanded since the negro, unprepared for such responsibilities, has been suddenly, and without suitable training, thrown upon his own resources."

	Men.	Women.	Total.
Patients in hospital October 1, 1865 . .	152	103	255
Admitted in course of the year . . .	15	22	37
Whole number	167	125	292
Discharged, including deaths	19	22	41
Remaining, September 30, 1866 . . .	148	103	251
Of those discharged, there were cured . .	9	15	24
Died	5	5	10

Causes of death.—Cancer, 1; phthisis, 4; dropsy, 1; exhaustion, 3; general paralysis, 1.

Upon the subject of curability as influenced by sex, Dr. Chipley remarks: "During the first forty years of the operations of this institution, the probabilities of cure seem to have been largely in favour of males. The proportion during that period was as 44.58 per cent. of males is to 34.18 of females. During the past two years there has been a remarkable change in this respect; the percentage of recoveries on admissions of females has risen to 59.18, while the males have done little more than hold their own at 44.68 per cent." This change is attributed to the earlier admission of females, after the attack, and to the less crowded condition of their wards.

6. It will doubtless be remembered that, a few years ago (Nov. 30, 1860), the *Western Lunatic Asylum*, of Kentucky, was destroyed by fire, and that after a part of the new building was constructed the operations of the institution were resumed in it. In the report for 1866 we are informed that the whole structure is nearly completed.

	Men.	Women.	Total.
Patients at the beginning of the year	74	69	143
Admitted in course of the year	77	57	134
Whole number	151	126	277
Discharged, including deaths	36	25	61
Remaining, December 31, 1866	115	101	216
Of those discharged, there were cured	23	8	31
Died	9	16	25

"With enlarged accommodations," says the report, "there has been a correspondingly increased number of patients admitted during the year just closed; and, considerable as the increase has been, we still fall short of the constant demand for room, more particularly for male applicants; and, even with a completed building, I have doubt whether we will be able to admit all who will apply."

A large proportion of the patients admitted were in a condition of chronic insanity.

"Jails, county poor-houses, and work-houses have poured their flood of chronic insane, paralytics, and imbeciles upon us, and will continue to do so until all are provided for."

A large part of Dr. Rodman's report is devoted to the consideration of two important subjects: hospital provision for insane negroes, and further accommodations for the white insane of the State.

7. The *Northern Ohio Lunatic Asylum*, as appears by the report for the official year ending October 31, 1866, is about to be enlarged by the addition of two sections to the wings.

	Men.	Women.	Total.
Patients in hospital October 31, 1865	70	68	138
Admitted in the course of the year	60	76	136
Whole number	130	144	274
Discharged, including deaths	57	73	130
Remaining Oct. 31, 1866	73	71	144
Of the discharged, there were cured	33	43	76
Died	5	8	13

"Of the deaths, two were of pulmonary consumption, one of apoplexy, one of paralysis, five of exhaustion, one of peritonitis, one of pneumonia, one of typhoid fever, and one was caused by injuries inflicted by the patient upon himself before admission."

"We have endeavoured to provide suitable amusements and recreations for the inmates. In addition to the usual in-door amusements, a billiard table has been procured, which affords cheerful recreation to the patients. The grounds in the rear of the male wards have been under-drained and graded, affording us a fine play-ground, where the male patients engage almost every pleasant day in a game of bass ball or cricket. These have proved to be very attractive games to the patients, affording them amusement and healthful exercise."

Doctor Stanton's report is very brief.

8. Two additional sections to the wings of the *Southern Ohio Lunatic Asylum* were begun in the course of the official year ending Oct. 31, 1866. These structures, when completed, will finish the building according to its original design.

	Men.	Women.	Total.
Patients in hospital Nov. 1st, 1865	77	96	171
Admitted in course of the year	44	59	103
Whole number	121	153	274
Discharged, including deaths	40	57	97
Remaining Nov. 1st, 1866	81	96	177
Of those discharged, there were cured	26	35	61
Died	2	4	6

Causes of death.—Consumption, 2; paralysis, epilepsy, suicide, and intestinal hemorrhage, 1 each.

In treating of the liability to a recurrence of insanity in case of cure, Dr. Gundry says: "Insanity leaves behind it a flaw, which may require a greater or less strain to detect hereafter, but it is present, even if unnoticed, and the dictates of common prudence require due precautions to be observed, lest it endanger the future integrity of his mental operations. The evil cannot be ignored by closing the eyes to its existence. It must be calmly considered, and quietly and resolutely encountered. But, on the other hand, it is not necessary or beneficial to be constantly surveying the defect. An undue or excessive attention to it would be as unwise as a reckless disregard of its presence. It leads to an excessive timidity with reference to anything connected with it; a horror in contemplating its cause—a constant dread which so often brings on the very evil dreaded; and which, as it clouds the whole of human life, is itself a greater calamity than any temporary disease. * * * * Self-control and self-restraint must be assiduously cultivated. Action—properly regulated action, of body and mind—is especially necessary."

9. In the course of the two years embraced by the report now before us from the *Illinois State Hospital*, the extensive buildings of that institution have been completed according to the original design, by the erection of "a lateral wing one hundred feet by forty-three feet, and a transverse wing, one hundred feet by forty-three feet. * * * The addition thus made will bring its capacity equal to the requirements of five hundred of the insane."

Patients in hospital Dec. 1, 1864	301
Admitted in two years	446
Whole number	747
Discharged, including deaths	429
Remaining December 1, 1866	318
Of those discharged, there were cured	146
Died	48

Causes of death.—Consumption, 13; epilepsy, 7; paralysis, 4; typhoid dysentery, 4; aneurism of heart, 4; erysipelas, 4; chronic diarrhœa, 2; typhomania, 2; abscess, 2; apoplexy, 2; spermatorrhœa, 2; diphtheria, 2; cancer of uterus, 1; pneumonia, 1.

A large part of Dr. McFarland's report is devoted to a discussion of the subject of the proper method of provision for the custody and care of the incurable insane. We find in this essay one important point which we do not recollect to have been made in any of the many arguments of the question. We quote the language of the author in its regard, together with the conclusion to which he arrives. "Asylums specially provided for the incurably insane would be extremely liable to the evils resulting from an inadequate supervision on the part of boards of trust. In this country, men of means and leisure to afford the time required by such responsibilities, are, unfortunately for our object, not numerous, and are particularly liable to be wanting where little of honour or pleasure can accrue from the most faithful discharge of duty. Success of some sort must be the attraction, to warrant the sacrifice involved in the control of any institution for the insane. A triumph in a branch of social science—a success in the practice of economics—would be the highest end sought in an asylum for incurables; and the English passion for serving on boards of trust does not find imitators enough here to properly fill the posts in question, where such are the only rewards. And it is as certain as any fact of the future can be, that without intelligent and vigilant boards of control, such institutions would become the abodes of every evil that follows irresponsibility, when found in a charge of such magnitude. The danger to private rights incurred by the existence of insane asylums owned and controlled by individuals, has been loudly proclaimed; but it is a doubt if they are half as pregnant of evil as gatherings of large numbers of the pauper classes regarded as beyond cure, and having their safeguard in the loosely-fitting sense of responsibility held by those likely to give them their time and service.

"From the foregoing observations the opinion may be gathered, that no institutions for the insane of this State should be countenanced which are not equal to the standard of the times in a full adaptedness to the cure and comfort of the insane of all classes; that institutions of cheap construction, designed to make cheapness of management a leading feature, will be found to disappoint the expectations of their promoters, and afford no enduring satisfaction to the people of the State."

10. The *Insane Asylum*, a State institution of Jackson, Louisiana, as appears by the report for 1866, is not organized like the hospitals of the more northerly States, with a resident physician as superintendent. Its medical duties are performed by Dr. Preston Pond, whose report occupies less than one page.

	Men.	Women.	Total.
Patients in hospital Dec. 31, 1865 . .	80	92	172
Admitted in course of the year . . .	15	9	24
Whole number	95	101	196
Discharged, including deaths . . .	13	12	25
Remaining Dec. 31, 1866	82	89	171
Of those discharged, there were cured .	4	4	8
Died	4	6	10

Causes of death.—Phthisis, 3; epilepsy, 2; marasmus, 1; softening of brain, 1; general paralysis, 1; typhoid fever, 1; chronic diarrhœa, 1.

The larger part of this pamphlet is occupied by the report of the administrators (trustees) of the hospital. In this, as in nearly all of the recent reports which we have seen from the hospitals in the Southern States, the subject of insanity among the freedmen, and the proper method of supporting the coloured insane, is discussed. P. E.

Art. XXII.—*Transactions of the New Hampshire Medical Society, at its Seventy-fifth and Seventy-sixth Anniversaries.* The first held at Portsmouth, June 27, 28, 1865; the second at Hanover, June 5, 6, 1866. 8vo. pp. 125. Manchester, N. H., 1866.

The session of 1865 was opened by an address from the President, Dr. J. Clough, of Lebanon. This address has one recommendation—its conciseness; we might also add another, the plain common sense with which its leading theme, the influence of the mind over the body, is treated; or, more properly speaking, with which it is sketched in outline. It could scarcely be expected that a subject so important and of such wide extent as the influence exerted by the exercise of the mental and emotional faculties, over the physical energies and the regular action and nutrition of the human organs, could be thoroughly discussed in the space of some four octavo pages.

The "Significance of Pain," is the subject of a paper, read before the Society at its session of 1865, by Dr. A. B. Crosby. Though the subject is by no means very profoundly treated, or examined fully, yet the remarks offered by Dr. C. in respect to it are in the main correct and full of interest. The object of the author is to show that, as great an evil as pain is, it serves man well, inasmuch as it insures the preservation of the species, warns us of the invasion of disease, while its severity may be measurably increased or diminished in proportion as we are petulant or philosophic. The following are the propositions advanced and defended by Dr. C.

"1st. Pain is not an unmixed evil, but is a beneficent gift of God, designed for the self-preservation of all animals, each being endowed with this sense to an extent only sufficient to insure this result.

"2d. Even in disease pain is not an unmixed evil, but, on the contrary, is one of the most valuable pathognomonic signs.

"3d. The intensity of pain is largely dependent upon the mental condition of the person suffering."

A sensible paper on "Practical Medicine," is communicated by Dr. T. J. W. PRAY. The points which Dr. P. is especially desirous of enforcing are: A proper dignified silence in respect to the pretensions and temporary prevalence of any form of empiricism. The success of every theory based on error and every practice founded thereon must, necessarily, after a popularity of longer or shorter duration, according as they are more or less specious, come to a close. The true alone continue and in the end triumph. Dr. P. contends for the adoption by the practitioner of a more simple means of medication than that usually pursued: of less complex and, as far as possible, less repulsive formulæ for prescriptions. Dr. P. would have physicians in their efforts to conduct disease to a favourable termination, without rejecting entirely the employment of drugs, to trust more to the powers of nature, and to assist these by a proper diet and regimen, rather than by a resort in every case to active medication.

In the remarks of Dr. P. there is, strictly speaking, nothing new; still, old things may be very profitably reconsidered and enforced until they shall attain to the place they should by right occupy.

In the report on "Epidemics," by Dr. S. M. WHIPPLE, there are many truths stated, which are generally recognized by the profession. To the success of the attempts at an explanation of those truths made by Dr. W., we cannot, however, assent. We do not believe that facts will bear him out in evidence of the validity of his theory of the etiology of epidemic diseases. "The generally accepted theory concerning epidemics," he remarks, "is, in my opinion, erroneous. They do not depend for their severity or continuance upon the '*constitutio æris*,' the constitution of the atmosphere, so much as upon the predisposing causes which lie inherent within the human system. Epidemics of a special character prevail only at long intervals. Do these depend upon some material influence of the atmosphere, or upon a depraved condition of the vital functions? In the normal state there is a constant disintegration and reproduction of cells, and an equable and reciprocal balance between the processes, constituting health in the economy. But if the supply of pabulum is diminished in quantity or altered in quality, this natural equilibrium is destroyed, and disease results as a necessary and natural consequence. If a habit be continued then by any one, or any number of persons, in a given locality for a series of years, which tends insidiously to destroy this natural equilibrium of assimilation, the fibrinous plasma ceases to be properly elaborated, the red globules decrease in quantity, the albuminous element becomes excessive, and a condition of disease is developed throughout the economy. They who are victims to epidemic disease are in this condition, and however slight the exciting cause may be, whether from the atmosphere, from irregularities, or from contagion, the most alarming and malignant diseases are ushered in. Aerial or malarial causes alone, without the predisposing tendencies inherent in the system, would affect all alike, and healthy tissue would become equally impressed with that which is diseased, which is contrary to the experience of all. The food for epidemics, therefore, is accumulating in the blood of its victims in different proportions, until one or a few in a given locality, are seized with disease, then the '*malaria of contagion*' affords a sufficient exciting cause to ignite the latent spark in others of like condition, and the deadly malady spreads with unmitigated fury."

With all its mingling of truth and error, giving to it a specious appearance of truth, the want of accuracy in this explanation of the origin and spread of epidemics, when compared with the wide range of facts we possess, bearing upon the subject, will quickly appear.

The *Transactions* of the Session of the New Hampshire Medical Society for 1866 open with an address from the President, Dr. W. D. BUCK, which is marked throughout by sound common sense. It is somewhat fragmentary, it is true, in its character, and composed in a slip-shod familiar style, bearing, however, with all its very plainness and contempt of polished diction, much to interest and to instruct. Speaking of particular operations in Surgery, as acquiring, in consequence of the benefits which have been derived from them in the hands of certain distinguished operators a kind of fashionable pre-eminence, Dr. B. remarks:

"A distinguished surgeon in New York city, twenty-five years ago, said, when Dupuytren's operation for relaxation of the *sphincter ani* was in vogue, every young man who came from Paris found every other individual's anus too large, and proceeded to pucker it up. The result was that New York anuses looked like gimlet-holes in a piece of pork. It seems to me that just such a raid is being made upon the uterus at this time. It is a harmless unoffensive little organ, stowed away in a quiet place. Simply a muscular organ having no function to perform save at certain periods of life, but furnishing a capital field for surgical operations, and is now-a-days subject to all sorts of barbarity from surgeons anxious for notoriety. Had Dame Nature foreseen this, she would have made it iron-clad. What with burning and cauterizing, cutting and slashing, and gouging, and spitting and skewering, and pessarying, the old-fashioned womb will cease to exist, except in history. The *Transactions* of the National Medical Association for 1864 has figured one hundred and twenty-three different kinds of pessaries, embracing every variety, from a simple plug to a patent threshing machine, which can only be worn with the largest hoops. They look like the drawings of turbine water-wheels, or a leaf from a work on entomology. Pessaries, I suppose, are sometimes useful, but there are more than there is any necessity for. I do think that this filling the vagina with such traps, making a chinese toy-shop of it, outrageous. Hippocrates said that he would never recommend a pessary to procure abortion—nay, he swore he never would. Were he alive now, he would never recommend one at all. If there were fewer abortions there would be fewer pessaries, and if there were fewer pessaries there would be fewer abortions. Our grandmothers never knew they had wombs only as they were reminded of it by the struggles of a healthy fœtus, which, by the by, they always held on to. Now-a-days, even our young women must have their wombs shored up, and if a baby accidentally gets in by the side of the machinery, and finds a lodgment in the uterus, he may, perchance, have a knitting-needle stuck in its eyes before he has any. It is the easiest thing in the world to introduce a speculum and pretend to discover ulceration of the os, and subject a patient to this revolting manipulation once or twice a week, when there is, in fact, nothing the matter. By some practitioners, all diseases which occur in the female are attributed to the uterus. In this class are especially to be included all such as make of the abnormal conditions of the uterus a speciality."

A very neat *address to the members of the New Hampshire Medical Society* by the President of Dartmouth College, Rev. Asa D. Smith, follows. In it is pointed out in very proper and discriminating terms the importance, usefulness, and dignity of the medical calling, and its claims to the rank of an indispensable art, and of a high-toned and truly learned profession.

A paper on "The Abuse of the Topical Treatment of Diseases of the Uterus" is communicated by Dr. Albert Smith. The subject is treated with much candour and truth. Whilst he recognizes the very great good which many patient's have experienced from the direct application of remedial agents and means to the diseased womb, the practice being resorted to only in proper cases, and in such, only, with the utmost care and caution, Dr. S. would impress upon the mind of the practitioner who designs to direct his especial attention to the treatment of uterine accidents and diseases, that the exploration of these is not always satisfactory, and that an injudicious and ill-timed resort to local remedial measures for their removal or alleviation is liable to produce much harm. That many of the diseases, incurvations and displacements which are now subjected to a severe and protracted local course of treatment, could have been successfully treated without them, at the same time, with less trouble to the practitioner, and certainly with less danger and suffering to the patient.

We have next in order an *Oration* by Dr. Charles F. P. Hildreth, of Concord. The theme discussed is "The True Practice of Medicine." The subject is concisely, but very judiciously treated. No one who has a just estimate of the true character of our profession will dissent from the orator, when he says in his peroration :—

"In the true practice of medicine we have a profession worthy of man's highest ambition. Adopting which he stands upon a platform broad and catholic, its foundation the eternal principles of truth. His *materia medica* embrac-

ing the good wherever found, discarding everything improper and injurious. An upright and candid course the only dealing with his patients, and the golden rule his sole guide of conduct toward his brother physicians. When this system shall prevail, although it may not bring the desired millenium, yet it will be an era of great joy to man, and the death knell of quackery. During our day and generation, the physician who follows the *true practice of* medicine may not acquire riches or renown, but something far better will he gain—the possession of a clear conscience and a life without offence. It will win for him the esteem of the good and true. At the bedside of suffering it will nerve him with greater strength to battle with the death angel for a still longer lease of life; and when his labours are finished, his reward will be the assured satisfaction that his duty was rightfully performed."

The *Transactions* for 1866 close with a short "Report on Surgery." To the few general remarks advanced by Mr. ROBINSON, its author, in reference to certain questions in surgical practice, we have nothing to object. Of their accuracy no one we think will doubt. They are, however, too detached, we might almost say too superficial, to permit of their influence being felt in the furtherance of that improvement in surgery which is in progress, but which cannot be considered complete until the necessity for a resort to the knife shall become a rare exception to, rather than the rule of practice.

D. F. C.

ART. XXIII.—*Obstetrics; the Science and the Art.* By CHARLES D. MEIGS, M. D., etc. etc. Fifth Edition, revised. With One Hundred and Thirty Illustrations. 8vo. pp. 760. Philadelphia: Henry C. Lea, 1867.

WE congratulate the medical public upon the appearance of this fifth edition of Dr. Meigs' work on Obstetrics. The treatise, so far as it regards the science and the practice of this important department of medicine, ranks, unquestionably, among the very best that have been issued, whether it be viewed as a manual for the use of the student, or as a handy book of reference for the young practitioner in cases of doubt and difficulty. The present edition presents the evidence, in almost every paragraph, of careful revision, rendering the work throughout still better for instruction in the science and the art of midwifery than it was before. We trust that the bodily health and mental powers of its distinguished author may long be continued, so that when other editions of the work shall be called for, they may appear under his personal revision.

We sincerely regret, however, that in considering some of the more prominent of the diseases incident to the puerperal female and to the new-born infant, Dr. M. should still adhere so pertinaciously to views, as well pathological as therapeutical, which are now rejected as incorrect, by the majority of the leading physicians of Europe and of this country, and that he should have resented with so much disdain every dissent from him as to their validity. We admit that a mere *expression of opinion* on the part of a medical reviewer is of no more value than the opinion of any other medical man of equal attainments, but when the reviewer presents a long series of facts carefully collected by different practitioners, labouring in widely separated fields, and all tending to one result, and that result decidedly opposed to the views held by the author he may have occasion to review, it would not be very unreasonable to suppose that these facts would be taken into consideration by said author and refuted if not reliable, or the deductions drawn from them shown to be erroneous if they be so. If, however, they are found to be correct and true, we do not see what humiliation any one can suffer who, in accordance with the truths thus revealed, shall modify any pet views he may have entertained in relation to the nature, seat, or causation of disease, or any cherished course of treatment he may have imagined to be the right one.

D. F. C.

ART. XXIV.—*A Memoir on Osteo-myelitis.* By JOHN A. LIDELL, A.M., M.D. Late Surg. U. S. Vols., &c. &c.

DR. LIDELL, the author of the above memoir, which was read before the New York Academy of Medicine, Dec. 19, 1866, is favourably known as a military surgeon, and has contributed to this Journal some of the most valuable papers on the surgery of the war that have appeared through other than official sources. Anything, therefore, from his pen on a subject which he, in common with all our military surgeons, have seen so much, will be received with interest. The paper is based upon studies of seventy-two cases, and purports to be a digest of a more extended report which has been prepared for the United States Sanitary Commission.

There is perhaps no subject of surgical pathology which has excited more general attention of late years, yet regarding which there are more conflicting views both as to its nature and limitation, than osteo-myelitis. The name, as generally attributed to Nélaton, 1834, is an unfortunate one, since it is capable of being applied to an inflammation of the lining membrane of a bone, as well as to an inflammation common to the lining membrane *and* the bone. The first of these, medullitis, has from the first been recognized, while primary involvement of the osseous tissue is very rare, and general osteitis following or accompanying acute medullitis among its most unfrequent complications. In chronic medullitis, on the other hand, the bone becomes affected in varying though conspicuous degrees, which are determined by the nature of the exciting cause in each case. It is in regard to such conditions that we more specially need instruction; and it is natural to presume that any one writing upon osteo-myelitis at this day would find small reason for writing at all if he could neither contribute to our meagre stock of knowledge by new facts of his own, nor set opinions to rights by confirming or refuting the alleged facts of others. In endeavouring to accomplish the first he would attempt to define the exact signification of osteo-porosis in a long bone; whether or no it is a progressive condition from below upwards; what is the exact nature of the breaking-down process in the medulla; and what are the relations of osteo-myelitis to pyemia; and of the second, to give hearing to other observers, and if unable to refute their statements, to freely acknowledge them by giving them the proper place in the literature of the subject.

But Dr. Lidell's memoir, although giving us a graphic description of familia conditions, and furnishing us with an elaborate, though incomplete, bibliograph is singularly deficient, we regret to say, in any systematic attempt to throw lig upon the above mooted points. He makes no allusion to the loosening of t periosteum in osteo-myelitis of stumps—a condition dwelt upon by Valette, a confirmed by others—merely touches on the inflammatory involvement of bor and omits all mention of the limit of inflammation in cases of compound fractu being determined by the position of the nutritious foramen of the shaft. the same time, he has systematically ignored all observations which have a peared south of New York—no mention being made of Dr. T. G. Morto successful amputation at the hip-joint for chronic osteo-myelitis; nor even the way of refutation, which would be desired if the observations are erroneo or of other original matter, which has appeared in a recent volume of t Journal.

We await with interest the appearance of his extended report, in which t subject is to be treated at greater length. H. A

ART. XXV.—*Treatment of Fractures of the Lower Extremity by the Use of the Anterior Suspensory Apparatus.* By N. R. SMITH, M. D., Professor of Surgery in the University of Maryland. 8vo. pp. 70. Baltimore: Kelly & Piet, 1867.

WE regret to have to say that this volume can scarcely add to the deservedly high reputation of its author, and is but adapted to produce a feeling of disappointment in the minds of its purchasers. The anterior splint, or rather the principle of suspension in the treatment of affections of the lower extremity, is of enough importance to merit a much more thorough and careful consideration than is here given to it.

The author's style is frequently obscure, and at times scarcely characterized by that dignity which befits a scientific essay; and the only really valuable portion of the book is the collection of cases at the end, which, with one exception, are sufficiently well reported, and would have formed an appropriate and useful contribution to one of our numerous medical journals.

The volume is badly printed, though with much pretension to elegance; and the wood-cuts, though tolerably numerous, are not particularly well executed. The publishers have thought fit to append a long catalogue of their stock of medical literature, which being printed in exactly the same style as the text of the book itself, is apt to mislead the hasty purchaser into the impression that he is buying a work nearly one-half larger than that which he actually obtains.

J. A., Jr.

ART. XXVI.—*Practical Dissections.* By RICHARD HODGES, M. D. Formerly University Demonstrator of Anatomy in the Medical Department of Harvard. Second Edition, thoroughly revised. 12mo. pp. 286. Philadelphia: Henry C. Lea, 1867.

THIS little book appears in its second edition in an entirely new dress, and is presented to the profession through a Philadelphia publisher. Thirty-two pages have been added to the original impression, and its title-page informs us that the work has been thoroughly revised. We notice that the general rules to be observed in dissecting have been re-written; and a number of typographical errors, pointed out in this Journal in a notice of the first edition, have been corrected. The result is creditable to Dr. Hodges, and indicates that if, with minor deficiencies, the book has passed through its first edition, that now, with these deficiencies in part supplied, and its subject-matter increased, it may command an increased sale.

The author shields himself from the charge of insufficient description in his long sentence of the Preface, where he states that "the *Practical Dissector* is not a treatise on anatomy, nor in any way a substitute for one. It is intended to be simply a practical guide in the ordinary dissections of the medical student; describing on the same page, and in connection, the muscles, nerves, arteries, veins, or other structures which are conjointly exposed." We therefore have nothing to say to the extreme incompleteness of those portions having important surgical relations, as for example in the account of the male perineum. We cannot refrain from regretting, however, that in an elementary work descriptive of organs should occasionally be overloaded with the absurd nomenclature of old anatomists, especially since efforts have been made on the part of recent teachers to institute a simpler one. Thus, in the account of the petrous bone, "innominate fossa" is employed in preference to "fossa of the hiatus"—while "scaphoid fossa," which is given in all authorities we are familiar with as synonymous with "innominate fossa," is applied to the "fossa of the petrous apex" (fossa triangularis). The equally ancient classification of cranial nerves, according to Willis, is adhered to in preference to that of Soemmering,

which is in all respects its superior. Again, no relations, surgical or otherwise, are given to the parts described; while in no instance is a function assigned to any muscle, membrane, or nerve. These omissions present objections to those who believe that simplicity of statement and an early recognition on the part of the student of the uses of organs are important features in teaching. But they are errors of omission only, not of commission. We find the author at all times at ease with his subject; and it would, we conceive, be a difficult matter to state the same number of facts with equal conciseness and perspicuity in a smaller space.

Appended to the Dissector is a chapter, suggested by an interesting article by Luther Holden, in 2d vol. *St. Bartholomew's Hospital Reports*, entitled "Important Anatomical Landmarks and Points, capable of being Studied without Dissection, or upon the Living Subject." This is an admirable feature, and should, we think, enter into all treatises on anatomy. We cannot speak so favourably of the chapter on the anatomy of the fœtus, which is too meagre, and will not stand comparison with similar sections in other works. H. A.

ART. XXVII.—*Notes on Fractures of the Upper Extremity.* By JOHN H. PACKARD, M. D., one of the Surgeons of the Episcopal Hospital of Philadelphia. 8vo. pp. 58. New York, 1867.

No class of injuries is more interesting to the practical surgeon than that of fractures, as well from the frequency of their occurrence in ordinary experience, as from the fact that they are almost always (if we may use the term) acute cases, their treatment being generally susceptible of satisfactory completion without the weariness on the part of both patient and doctor, which is so apt to attend the management of other common surgical affections, such as ulcers, burns and scalds, or chronic affections of the joints.

The pamphlet before us contains, as we learn from a foot-note, the substance of a series of lectures (the second under a bequest of the late Dr. Mütter) delivered in April, 1866, at the hall of the Philadelphia College of Physicians. The foundation of this "Mütter Lectureship" on Surgical Pathology we regard as one of the most important provisions for the extension of medical science that has been instituted in Philadelphia for many years. It will be remembered, by our readers, that Mr. Paget's admirable lectures upon Surgical Pathology were originally written for delivery upon a similar foundation; lectures that in their published form have passed through many editions and gained for their author a deserved and world-wide reputation.

Dr. Packard is already well known to our readers as a writer upon Fractures, from having some years since translated and edited the first volume of the inimitable work of Malgaigne. In the pamphlet before us Dr. Packard has confined his remarks to the fractures of the upper extremity, and has illustrated his pages with numerous original woodcuts. The pamphlet consists of five portions, discussing respectively (1) the structure of bone and the general causes of fracture; (2) fractures of the clavicle; (3) fractures of the scapula and humerus; (4) fractures of the forearm; and (5) fractures of the lower extremity of the radius.

We are pleased to see that Dr. Packard has very clearly pointed out the beautiful arrangement of interlacing arches in the intimate structure of bones, by which their strength is so greatly increased.

In opposition to the views of Malgaigne, Hamilton, and others, Dr. Packard believes the displacement and deformity in cases of fracture to be almost entirely due to the action of the circumjacent muscles at the moment of fracture. The example which he gives of deformity produced by another cause—viz., the outward rotation in fractured thigh from the weight of the foot—seems to us, however, rather an unfortunate illustration, as the same outward rotation occasionally persists even when the foot is replaced in the vertical position; just as eversion

of the knee is one of the most troublesome deformities in cases of fracture of both bones of the leg, though the foot may be most accurately adjusted to the foot-piece of the fracture box.

There is one cause of deformity after fracture to which we find no allusion in the pamphlet before us; this is the natural *elasticity* of the surrounding soft parts, without regard to any actual muscular *contraction*. This is well pointed out by M. Anger (in the case of fractures of the clavicle) in his magnificent illustrated work now in course of publication by M. Germer Baillière, of Paris. The clavicle, in the natural state, is *held down* (as it were) by the weight of the arm and the action of the muscles attached to its lower surface (especially the deltoid), and indirectly by those attached to the scapula; now, in case of fracture, most of these forces continue to act upon the acromial portion of the clavicle, while the sternal portion, separated from the rest by the solution of continuity, is tilted upwards by the natural elasticity of its ligamentous attachments, the sterno-cleido-mastoid muscle, etc. That this is correct is shown by the fact that in many cases though the shoulder be elevated, the scapula drawn backwards, and the other usual indications met, yet the deformity will remain, and in such cases can only be overcome by making direct pressure upon the outer end of the sternal fragment.

Dr. Packard follows the majority of writers in stating that after fracture of the clavicle, "pushing, pulling, and lifting are all rendered either impossible or very imperfect until union takes place." In the same view it has been generally stated that a diagnostic mark of this fracture is the impossibility of raising the arm behind the head; but as demonstrated by Velpeau there is no impossibility in the matter, a portion of the trapezius muscle substituting, though imperfectly, the function of the clavicle in steadying the shoulder, and the patient being really able to raise the arm though naturally shrinking from doing so on account of the pain attending the movement.

Dr. Packard's suggestion that fractures of the clavicle may be produced by that bone being bent over the first rib, as a stick is broken by being bent over the knee, has certainly the merit of novelty; we think, however, that its demonstration is as yet a thing of the future.

We have chosen Dr. Packard's remarks on fractured clavicle for comment, as perhaps offering a wider scope for diversity of opinion than other portions of his subject. We have found his remarks on treatment practical and judicious, as might be expected from his known reputation as a surgeon of skill and experience. We commend his well-printed "Notes" to those of our readers who may wish to refresh their recollections upon this most important branch of surgical practice.

J. A., Jr.

ART. XXVIII.—*Researches upon "Spurious Vaccination," or the Abnormal Phenomena accompanying and following Vaccination in the Confederate Army during the recent American Civil War.* By JOSEPH JONES, M. D., Professor of Physiology and Pathology in the Medical Department of the University of Nashville, Tenn. 8vo. pp. 134. Nashville, Tenn., 1867.

THESE researches were published originally in the *Nashville Journal of Medicine and Surgery*. They are based upon facts observed among the troops of the "Confederate armies," and lead to conclusions in respect to the cause of the failure of vaccination to protect the system from variolous infection, and the positive disease inflicted upon the system by the employment of certain forms of spurious and contaminated virus, which, though not absolutely new, are of the highest importance in their practical bearing.

Dr. Jones, as the result of his investigations, presents the following prominent causes of the injurious effects of attempts to place the system under the influence of the vaccine infection occasionally met with: 1st. Depression of the vital forces from fatigue, exposure, and poor diet, impoverished, vitiated, and scorbutic condition of the blood of those vaccinated or yielding vaccine matter.

2d. The employment of virus from pustules or ulcers which had occurred in consequence of a deviation from the regular course of development of the vaccine disease; such deviation being due mainly to previous vaccination, and the existence of some eruptive disease at the time of vaccination. 3d. The use of vaccine lymph or crusts in which decomposition had taken place in consequence of the matter having been carried about the person for a long time, and thus subjecting it to the influence of a warm, moist atmosphere. 4th. The mingling of the vaccine virus with that of smallpox. The use of matter taken from those who had been vaccinated while affected with poison of smallpox is capable of producing a modified and comparatively mild form of variola in those inoculated, while by infection it may give rise in the unprotected to an attack of smallpox of the worst character. 5th. The employment of vaccine lymph or crusts taken from those who were labouring under erysipelas during the progress of the vaccine infection, or whose systems were in a depressed condition from improper diet, deficient ventilation, or the exhalations from patients labouring under typhoid fever, erysipelas, hospital gangrene, pyæmia, and ill-conditioned wounds. 6th. From the use of either fresh or dried vaccine lymph or crust taken from patients suffering from syphilis at the time and during the progress of vaccination.

We accede to the general truth of the foregoing conclusions. That, in order to render vaccination a perfect and an enduring protection against the infection of the variolous poison, it is essential to employ perfectly fresh, pure, and effective vaccine matter, and to be sure that when it is inserted into the arm that the patient is entirely free from disease of any kind, we have on more than one occasion endeavoured to prove, and we believe that such is now the opinion of all well informed practitioners. Whether, however, vaccine virus derived from persons who are labouring under certain diseases is capable of communicating the latter to those into whose systems it is introduced in the process of vaccination, is a question still not positively settled. From what has fallen under our own observation bearing directly upon the question, we should be induced to decide it in the affirmative. This much is very certain, that the facts that have recently been elicited in proof of the possibility of communicating other diseases than the vaccine by the use of impure or infected virus, are of too imposing a character not to render every practitioner particularly cautious to employ for vaccination no matter of the purity of which, as well as the entire freedom from disease of the individual from whom it was derived, he has not the fullest assurance. D. F. C.

Art. XXIX.—*Medico-Chirurgical Transactions.* Volume XLIX. (Second Series, Vol. XXXI.) 8vo. pp. lviii., 224. London: Longmans, Green & Co., 1866.

The present volume of this most valuable collection contains seventeen distinct papers, with five plates and three wood-cuts. In accordance with the usual custom of the *American Journal*, we propose to lay before our readers a brief abstract of these papers. Seven of the seventeen have already been reproduced with more or less detail in the "Quarterly Summary" of preceding numbers of the Journal, so that the remaining ten will alone demand our attention at present.

I. *Observations on the Effect of Coffee on the Urea and Chlorides in Health*, by Charles E. Squarey, M. R. C. S., etc. Communicated by A. B. Garrod, M. D., F. R. S.—The author's observations were made upon himself and upon two patients. The daily results are carefully tabulated, and the author concludes that the amount of urea excreted is not appreciably diminished by the use of coffee in the doses taken (½ oz. to 2 oz. three times a day). In two cases no marked change in the amount of chlorides was observed, while in the third case the exhibition of three half-ounce doses produced a decided increase in the

amount of water passed and of chlorides, but, the patient leaving the hospital the next day, the experiment could not be repeated. In conclusion the author states that neither his patients nor himself felt the slightest ill effects from the large doses of coffee employed. The frequency of the pulse was generally slightly increased for an hour after taking each dose.

II. *Case in which the Operation of Trephining of the Spine was performed*, by SAMUEL GORDON, M. B., etc. Communicated with observations by ROBERT MACDONNELL, M. D., F. R. S., etc.

III. *An Account of an Arterio-venous Cyst in the Popliteal Nerve, for which the Limb was amputated*, by CHARLES H. MOORE, F. R. C. S., etc.—The contents of these two papers have already been presented to our readers in the number of the Journal for April, 1866.

IV. *A Case of Multiple Neuromata, Affecting the Nerves both Within and External to the Spinal Canal, some of the Tumours being of a Cystic Nature*, by SEPTIMUS W. SIBLEY, F. R. C. S., etc.—For an abstract of this paper, see the *American Journal of the Medical Sciences* for July, 1866, page 243. This paper is accompanied with a handsome plate, partially coloured, giving a good idea of the morbid appearances in the case.

V. *On Granular Degeneration of the Voluntary Muscles*, by EDWARD MORGAN, M. D., F. R. C. P.—Dr. Morgan exhibited to the Royal Medical and Chirurgical Society a patient affected with this curious disease, which has been called "Progressive Muscular Atrophy" and "Necrobiosis of the Voluntary Muscles," but for which the author prefers the name given at the head of this paper. It appears to be an idiopathic affection of the muscles themselves, no nervous symptoms being manifested during life and no changes in the nervous system being detected after death. In the patient exhibited, the progress of the disease had been materially retarded by the administration of Fowler's solution. A plate gives illustrations of the microscopic appearances in the affected muscles.

VI. *Notes and Observations on Fever on the West Coast of Mexico, in the year* 1860, by JOHN CADDY, M. D., etc. Communicated by the late THOMAS HODGKIN, M. D., etc.—The number of fever cases treated was 162, nine being of remittent and the remaining 153 of continued fever. Of these, only one proved fatal, the patient being a seaman between thirty and forty years of age, who died of exhaustion in the third month of his illness. The treatment employed, which the author justly considers to have been very successful, consisted principally in the administration of the sesqui-carbonate of ammonia with chlorate of potassa and lemon-juice in the early stages of the disease, with the use of iron and quinine afterwards, and soup and wine as required. The author has found the existence of an epidemic of fever in a ship's crew preceded and accompanied by a prevalence of diarrhœa and purulent affections of the skin.

VII. *A Case of Lumbar Colotomy (Amussat's Operation) successfully performed for the Relief of a Vesico-intestinal Fistula*, by T. HOLMES, M. A., F. R. C. S., etc.—This case has been already published in the number of this Journal for July, 1866, page 251. We regret to observe, from a recent number of the *Medical Times and Gazette* [January 19, 1867], that the relief afforded by the operation in this case was not permanent, and that the patient has since died with a return of his disease.

VIII. *On a Case of Hydatid Disease of the Liver, and Remarks on the Treatment of Similar Tumours*, by JOHN HARLEY, M. D., F. L. S., etc.—This interesting paper gives full details of a remarkable case of hydatid tumour of the liver, where a complete cure was effected by means of puncture followed by injection of various stimulating substances. Great stress is laid upon the importance of maintaining a free opening for the avoidance of reaccumulation, and the practical points to be attended to in the management of such cases are very well brought out.

The patient whose case forms the text of the paper had acquired the disease in Australia and had suffered from it more than six years at the time of the operation. The after-treatment occupied one hundred and fifty-eight days, and required the constant and unremitting watchfulness of the physician in attendance. Full tables of one hundred cases in which hydatid tumours of the liver have been subjected to operation are appended and add materially to the value of the paper. The author disapproves of the use of caustic potassa with a view to producing adhesions between the abdominal parietes and the sac, but makes no reference to the employment of acupuncturation recently suggested for a similar purpose in France.

IX. *On Disconnection of the Incus and the Stapes; its Effects upon the Function of Hearing, and its Treatment*, by the late Joseph Toynbee, F. R. S., F. R. C. S., etc.—This interesting paper is the eighth of a series, and is divided into two portions, headed "Anatomical and Physiological Observations" and "Pathological and Surgical Observations" respectively. The following are the author's conclusions under the first head:—

"1. That the function of the chain of bones is twofold, viz., the transmission of sonorous waves to the vestibule, and the regulation of their force.

"2. That when the continuity of this chain is interrupted by the disconnection of the stapes and incus, the functions of the chain may, nevertheless, be performed by the combined actions of the *tensor tympani* ligament and muscle and of the *membrana tympani* itself.

"3. That after the destruction of the *membrana tympani* and the loss of the incus, the stapes can still receive vibrations from the air and conduct them to the labyrinth in sufficient force to allow the patient to hear ordinary conversation with tolerable ease.

"4. That after the *membrana tympani* has been destroyed and the incus removed, the combined action of the stapedius muscle and the ligaments connecting the base of the stapes to the *fenestra ovalis*, may be adequate to perform the adapting function of the ear, so that the patient may hear ordinary conversation with tolerable ease."

Under his second heading the author enumerates the conditions in which the use of an artificial *membrana tympani* is desirable, and dwells particularly upon the fact that many persons are deaf *except when in the act of listening*; the act of listening (which consists in the action of the stapedius muscle drawing out the stapes) bringing the stapes and incus into contact and thus remedying the mechanical cause of the deafness complained of. The use of an artificial drum removes the difficulty by supporting the membrane of the tympanum, and thus re-establishing the deficient connection.

The following are the pathological conditions of the ear for which the artificial *membrana tympani* has been found efficient:—

"Disconnection of the stapes and incus, the *membrana tympani* being entire, but the tensor tympani ligament or the mucous membrane of the tympanum being relaxed.

"2. Partial or complete absence of the long process of the incus, the *membrana tympani* being entire.

"3. Disconnection of the stapes and incus, the *membrana tympani* being perforated, and the *tensor tympani* ligament, or the mucous membrane of the tympanum, being relaxed.

"4. Partial or complete loss of the long process of the incus, the *membrana tympani* being perforated, and the ligaments of the stapes being relaxed."

The form of artificial drum specially recommended by the author, consists of a bubble of vulcanized India-rubber containing air.

X. *A Case of Premature Menstruation*, by Thomas Clifford Allbutt, B. A., M. B., etc.—In this remarkable case five menstrual periods were observed in an infant, the first occurring when she was only eighteen months old. Each period was followed by great exhaustion with the appearances of hectic fever, and the child finally sank after the fifth recurrence of the menstrual flow. No *post-mortem* examination could be obtained.

XI. *Case of Myeloid Transformation of the Lungs*, by THOMAS CLIFFORD ALLBUTT, B. A., M. B., etc.—The patient was a boy, fourteen years old, who had been affected with the disease for a long, though uncertain period. The condition of the lung was not recognized during life, as indeed it would seem almost impossible that it should be, and the autopsy was performed under such disadvantages that it could not be ascertained from what part of the thoracic cavity the disease originated. Dr. Moxon made a microscopic examination of the specimens obtained, and his report of their appearances is appended to the paper.

XII. *On Atrophy or Degeneration of the Muscles of the Upper and Lower Extremities, from Disease of the Spinal Cord*, by GEORGE LEWIS COOPER, F. R. C. S., etc.—An abstract of this paper has already been published in the number of this Journal for October, 1866, page 532. The report of the examination of the spinal cord is contributed by Mr. Lockhart Clarke, and the paper is illustrated by a plate partially coloured.

XIII. *On a Case of Elephantiasis Arabum, or Elephas, successfully treated by the Application of a Ligature to the Main Artery of the Limb; with Remarks*, by THOMAS BRYANT, F. R. C. S., etc.—The patient was a young woman, aged 25, in whom the disease had originated during convalescence from an attack of scarlet fever ten years previously. Both thigh and leg (of the left side) were affected, the foot however remaining of the normal size. Deligation of the external iliac artery was practised, the ligature dropping on the fifteenth day, and the cure being completed in about seven months.

Abstracts of eight cases where the same treatment was employed are appended, a fatal result (from pyæmia) having ensued in but one. Four of the eight cases are Dr. Carnochan's, of New York, in one of these both femoral arteries having been tied with an interval of some months between the operations.

The author concludes his paper by considering the pathology of the disease in question which he believes to consist in "an abnormal effusion of tissue-making elements," comparing it to the ordinary "fibro-plastic" tumour which it resembles in its microscopic appearances. Two plates accompany this paper, illustrating the appearance of the affected limb in comparison with the sound one, before and after the operation.

XIV. *An Account of a Case of Oblique Inguinal Hernia on Each Side, in which, the Testis remaining in the Belly, the Hernial Sacs descended into the Scrotum and also ascended upon the Aponeurosis of the External Oblique Muscle*, by J. W. HULKE, F. R. C. S., etc.—The patient was a man, aged twenty-seven, who was operated upon for strangulated hernia, dying the next day, and the autopsy revealing the condition of things described in the heading of the paper. Ten and a half feet of small intestine were strangulated, and there was peritonitis at the time of operation, though strangulation had existed for but three hours. The anatomical peculiarities of the case, which was certainly one of unusual occurrence, are fully described.

XV. *An Account of a Second Case, in which the Corpus Callosum was Defective*, by J. LANGDON H. DOWN, M. D., etc.—The author refers to a previous paper in the 44th volume of the *Medico-Chirurgical Transactions*, in which he described a similar case and compared it with others, the histories of which he had found recorded. [See *Amer. Journ. of Med. Sciences* for April, 1862, p. 473.]

The patient whose case forms the subject of the present communication was a man of forty years, who had been imbecile from birth. The rarity of the malformation found in this case may be estimated from the fact stated by Dr. Down that he has met with it but twice in the examination of 150 brains of idiots.

XVI. *Remarks on Chronic Albuminuria originating during the Convalescence from Scarlet Fever and other Eruptive Diseases*, by HERMANN WEBER, M. D., F. R. C. P., etc.

XVII. *On the Detection of Lung-Tissue in the Expectoration of Persons affected with Phthisis*, by SAMUEL FENWICK, M. D., etc.—Abstracts of both

these papers have already appeared in this Journal, in the number for January of the present year, pages 253 and 250 respectively.

Looking upon the present volume of the *Medico-Chirurgical Transactions* as a whole, we cannot but think it inferior in interest and value to several of its predecessors; it contains notwithstanding a certain amount of material which cannot be obtained elsewhere, and may therefore well take its place with its forty-eight elder brothers as forming a series unsurpassed in value and importance as well to the student as to the active practitioner. J. A., Jr.

ART. XXX.—*Transactions of the Obstetrical Society of London, for the year 1866.* Vol. VIII. 8vo. p. 403. London, 1867.

THIS volume opens with the history of a case of "Double Headed Monstrosity," by Dr. J. G. SWAYNE.

Mr. W. B. OWEN relates a case of "Mechanical Obstruction to the Growth of a Fœtus." This was also a case of deformity. When the fœtus was expelled it was found that its body, in every respect well formed, terminated abruptly at the lower part of the trunk. The legs, which were those of a fœtus about the fourth month, were bound down in front of the pelvis, by the umbilical cord, so closely that they had become imbedded in the soft part of the walls of the abdomen. This had been effected by several convolutions of the cord, passing alternately before and behind the two limbs, in the form of the figure 8, and in this manner entirely obstructing their growth. At one point near the groin the pressure of the cord had been so great and long continued, as to be gradually effecting the amputation of the extremity. The legs were perfectly formed, and but for the mechanical interference with their growth, would have presented no irregularity.

Two kidneys were exhibited by Dr. MURRAY, weighing, the one, seven ounces and four drachms, and the other, six ounces three drachms and a half. They had been removed from a still-born fœtus otherwise normally formed.

In a paper entitled "Brief Notes on some Uterine Therapeutics," Mr. H. E. EASTLAKE calls attention to the *resin of podophyllum* as an emmenagogue. "Whether," he remarks, "it really possesses any specific action upon the uterus, or simply acts sympathetically by stimulating the lower intestine in the same way that aloes and other cathartics do, I am not prepared to say." Mr. E. also refers to the benefit resulting from the use of the *spiritus pyroxylicus rectificatus* of the last London Pharmacopœia, in cases of obstinate vomiting during pregnancy, as well as of the sympathetic vomiting in phthisis. The dose is five minims, in a drachm of the compound tincture of cardamom, every four hours. Attention is likewise directed to the use of *iodoform* as a sedative in cancer, especially when it attacks the uterus. Mr. E. has given the iodoform in doses of two to three grains made into a pill with crumb of bread, and in one case of far advanced disease, applied it, also, locally to the cervix uteri by means of medicated pessaries. The effect was, in all cases, a marked diminution of pain and discomfort, without any evil results in respect to the general health, such as constipation, nausea, loss of appetite, &c., which so often follow the use of opiates and other sedatives under similar circumstances.

Dr. GREENHALGH is in the habit frequently, of giving iodoform in doses of from three to five grains three times a day, and also as a vaginal suppository in the proportion of one grain to a scruple of cocoanut butter. Dr. G. has prescribed the drug in carcinoma, external and internal; in epithelioma of the uterus; in rheumatic gout, neuralgia, and in numerous cases of chronic enlargements, and of marked sensibility from a variety of causes, in most of which it had been followed by good results.

A case is related by Dr. J. HALL DAVIS, of "Fibrous Tumour of the Uterus" attended by early pregnancy; retroversion of the uterus, and retention of urine;

with death and decay of the fœtus, and, subsequently, death of the patient from pyæmia.

Dr. Davis thinks that this case may serve a useful purpose in directing us in all cases where severe constitutional disorder coexists with putrid discharge from the uterus, not proved to be of cancerous origin and irremediable, to endeavour to remove the cause which keeps up such constitutional disturbances.

Dr. ROUTH considered the case was important in the aspect of what should be done in such cases—that is, when abdominal tumours coexist with pregnancy. The post-mortem examination revealed a large fibroid extra-uterine tumour with small pedicle: precisely the case most favourable for gastrotomy. Should this patient have been operated on before delivery, or should labour have been first prematurely induced? Dr. R. advocated the latter course: First, because when abdominal tumours, whether ovarian or uterine, especially if fibroid, have been operated on before labour, miscarriage, or premature delivery was induced—occasionally death. Second, by first causing premature labour, not only is the diagnosis as to the exact nature and bearings of the tumour made more clear, but the impetus which pregnancy gives to its rapid growth removed.

We pass by the "Annual Address" of the President, Dr. ROBERT BARNES. It is made up almost entirely of short biographical notices of members of the Society who had died during the year 1865.

Dr. MEADOWS related two cases, and exhibited two specimens, of "amputation of the cervix uteri." In both cases the operation was performed for *allongement* of the uterus, with more or less procidentia. In both cases the uterus has continued so high up since the operation that there is every reason to believe a cure will be effected.

Dr. BARNES related two cases of "sudden death during labour." In one, that of a primipara, maniacal excitement came on during the dilatation of the cervix. Chloroform was given to the extent of inducing moderate anæsthesia, to facilitate the application of the forceps. Gentle traction, aided by the uterine pains, effected delivery in half an hour. The placenta was cast. The pulse continued good. She spoke deliriously at times, but also rationally afterwards. Death occurred, somewhat suddenly, ten hours after delivery. No post-mortem examination was held. Dr. B. did not think death was owing to the chloroform, but was disposed to attribute it to the nervous shock which was manifested before the chloroform was given. The other case was more clear. The patient was in her seventh labour. Convulsion, stertor, and syncope set in before the expulsion of the child. The child was born alive. The mother died twenty minutes afterwards. A small clot, quite recent, was found in the left thalamus opticus; and another, larger and of a dissecting character, in the left crus cerebri. Abdominal and pectoral organs were healthy. Dr. B. considered that the report of such cases was exceedingly important, as supplying illustrations of the fact that death may occur during labour independently of any fault on the part of the practitioner.

A paper by Mr. BENSON BAKER, was communicated by Dr. G. Hewitt, on "The Influence of Lead Poisoning in producing Abortion and Menorrhagia." The chief object of the paper is an exposition of the evidence in proof of the hereditary transmissibility of lead poison, and of the influence of such inherited lead poison in the production especially of abortion. Mr. B. has not met with any cases where the woman primarily took the lead poison, the father remaining healthy, nor any in which the mother was free from the poison while the father was contaminated, consequently, from his personal observations he cannot say how far the lead poison in the system of the father may, of itself, affect the offspring. He has no doubt that if the mother's system be permeated with lead poison, and she becomes pregnant, she will either abort, or if she goes her full time, the child will be born sickly, and most probably perish at an early period subsequently.

A paper was read by ARTHUR E. SANSOM, M. B., on "The Anæsthetic Properties of the Bichloride of Carbon." The impression of Mr. S. is that the anæsthetic in question has the advantage of being more pleasant, less pungent, and more comfortably inhaled than chloroform. But he does not "consider it

advisable to induce deep narcotism by means of this agent," and that its use in surgery will of course be restricted.

The next paper, by Dr. T. S. Beck, is a very full and able one, on "Enlargements of the Uterus following Abortions." An analysis of it will be found in our quarterly summary of the past year.

Mr. Baker Brown exhibited a male child born with amputated upper and lower extremities. It was two months old, well nourished, in excellent health, and without other deformity than the absence of the arms from above the elbows, and of the lower extremities to about the middle of the thighs.

Dr. H. M. Madge exhibited a fibrous tumour, weighing about two pounds, attached to the uterus, taken from a woman who had destroyed herself by taking oxalic acid.

Dr. Barnes communicated the history of a case of "Retention of a Fœtus in the Abdomen for forty-three years," by R. W. Watkins, Esq. This is a somewhat unique case and one of deep interest, not only as an instance of recovery from tubular gestation, with, probably, rupture, but also from the comparatively slight local and constitutional effects produced by the retention of a foreign body in the cavity of the peritoneum for more than forty-three years.

Dr. Barnes presented another mummified fœtus, with cord and placenta, that had been expelled from the uterus after the birth of a full-term child. This is one of the class of cases which are adduced in support of super-fœtation. Dr. B. believes that in the present instance there was a double conception; and that one fœtus was arrested in its development by the greater vitality of the other.

Baker Brown, Esq., relates eleven cases illustrative of the use of the actual cautery for the division of the pedicle or adhesions of the tumour in cases of ovariotomy. All these eleven cases resulted in recovery. In three of them Dr. B. was obliged to use ligatures of silver or of twine in addition to the cautery. In all ordinary cases, nevertheless, the division will be best effected, Dr. B. believes, by the hot iron, provided that, at the same time, a properly constructed clamp be made use of. He considers it advisable, also, that the iron should not be heated too hot; a simple red heat he thinks is best, so as not to hurry the process of separation.

A case is related by Dr. C. H. F. Routh of "Fibro-cystic Disease of Uterus mistaken for Ovarian Disease." Attempted extirpation; failure; death from rupture of a vessel within the cyst. This case presents several points of interest especially as to diagnosis.

Dr. Gervis exhibited a new "intra-uterine glass stem," which he had found to be free from the inconveniences attributable to the employment of those made of metal and ebony.

"A diseased placenta" was presented by J. Marshall, Esq., of Dover, supposed by him to be a specimen of fatty degeneration of the organ. It was examined by Dr. G. Hewitt. The amniotic surface of the placenta was of a dingy yellow colour, most marked towards the edge. The substance of the organ was on this side firm and hard, to a depth of half an inch at the outer margin, but becoming less and less in depth towards the centre, where the cord is attached. This dense yellow layer is abruptly separated from the softer structure of the placenta, and the vessels of the cord are seen to pass through it. Under the microscope this firm yellow layer appeared to have no definite structure. It was firmer in some parts than in others, but its texture was tolerably uniform. There was no evidence of fatty degeneration, excepting just at the circumference. While two or three of the branches given off by the umbilical vessels were of their ordinary size, a certain number had the appearance only of delicate cords. It would seem that the blood had circulated only through a few of the vessels while the others had become obliterated.

"The appearance and condition of the placenta is compatible with the theory that the indurated yellowish layer is the result of effusion of lymph at a period probably two or three months antecedent to delivery. Possibly the primary condition may have been effusion of blood beneath the amniotic covering of the placenta, and the subsequent absorption of the colouring portions. At all events," concludes Dr. H., "the condition does not appear to be one of fatty degeneration in the ordinary sense of the word."

Dr. A. MEADOWS relates the history of a case of "Cyst of the Fallopian Tube." The case terminated fatally; post-mortem examination showed extensive peritoneal inflammation and its results, especially in the uterine region. The uterus and its appendages were all bound up together by thick and firm adhesions. On dissecting them out it was found that both Fallopian tubes were irregularly enlarged, so as to form a kind of cyst. On the right side there were two such enlargements, on the left, one. There was no evidence of any communication between these and the fimbriated opening. On the left side there was not even an opening into the uterus. The cyst was filled with a dark, thick, grumous fluid of a prune-juice colour.

Dr. M. believes that this case furnishes an example of what Bernutz and Goupil have contended for, viz., menstrual retention in the Fallopian tubes. It is very certain that the Fallopian tubes do, as well as the uterus, take part in the menstrual excretion; hence, when any obstruction occurs to the passage of the menstrual blood into the uterine cavity and thence externally, symptoms of menstrual retention result. Whether the peritonitis which proved fatal in the present case, was the result of the escape of some of the retained fluid into the peritoneal cavity, or of reaction upon the peritoneum, Dr. M. considers it impossible to decide. It seems probable to him that with the existence of retention, and the consequent distension of the walls of the tubes, a cold douche that was employed at a time when a free discharge of blood was taking place, was the immediate exciting cause of the peritonitis, which probably would not have taken place had the parts generally been in a healthy condition.

Dr. R. GREENHALGH presented a paper on "Mechanical Dysmenorrhœa," in which he states that he had operated upon nearly 300 cases of this affection with but few and slight casualties. In one there was rather profuse hemorrhage, for which plugging was had recourse to; in about five others pelvic cellulitis ensued, a casualty which is by no means infrequent after the use of sponge tents; in one, peritonitis was set up, and terminated fatally. Strictures of the external os with conical cervix had been extremely rare in Dr. G.'s practice. In the great majority of cases the seat of the stricture was at the internal os, demanding free division. In nearly all the cases in which he has operated, he has been compelled to dilate the strictured parts, in order to permit the introduction of the metrotome. Formerly, Dr. G. was in the habit of dividing the cervix uteri with but little or no precautions. Subsequent experience, however, convinced him that although no evil ensued in the great majority of cases, still, every now and then much mischief resulted. He now makes it a rule first to improve, as far as possible, the patient's general and local conditions before operating, and then to keep her for two or more days in bed, under the surveillance of a good nurse, with an appropriate diet. Dr. G. alludes to the great danger of the introduction of the sponge tent after the division of the cervix uteri. He knows of one fatal case resulting from this practice, and is confident that many more will be added to the list if investigation be pursued.

Dr. Barnes exhibited a uterus, with its appendages affected with colloid disease: also a specimen of an abscess of the placenta, containing about an ounce of pus. In the latter case, no symptoms of pain were present during gestation. There had evidently been inflammation of the decidua. Such cases are very rare; only two or three are on record.

The history of "Cases of Laceration of the Uterus," with remarks, by Dr. THOMAS RADFORD, have already been noticed in the Quarterly Summary of this Journal, for 1866.

Dr. WYNN WILLIAMS exhibited a large abdominal cyst removed from a patient, forty-six years old, unmarried, who had suffered, more or less, for twenty years. When seen by Dr. W., the distension of the abdomen was so great as to endanger suffocation. Seventeen quarts of water were drawn off by tapping. The fluid began rapidly to accumulate, when it was determined to give her a chance for her life by attempting the removal of the cyst. The patient died the subsequent day to the operation, which was only partially successful. A post-mortem examination showed that the tumour had really no pedicle, and although firmly adherent to the diaphragm, duodenum, and the parts in the neighbourhood of the right kidney, it could not be said to have its origin from any of them.

The only plausible explanation of its production was that suggested by Dr. Routh, that it was one of those cases where a Graafian vesicle had escaped into the cavity of the abdomen, and become adherent to the tissues in the neighbourhood. The cyst contained cholesterine and granular matter.

Dr. G. Hewitt exhibited the uterus and ovaries of a female, fifteen years of age, who had died during the menstrual period, of severe fever. The mucous membrane of the body of the uterus was in places a third of an inch thick. It was very soft and velvety to the touch, attached firmly to the uterus, excepting at the internal os, where it was slightly separated from the uterine wall. The free surface of the membrane was quite perfect, the orifices of the uterine glands were distinctly seen. The mucous membrane at its deepest layers was intensely injected with blood, and a bloody fluid exuded from the uterine glandular orifices on the slightest pressure. One of the ovaries contained a recently ruptured Graafian follicle, the opening through which the ovum had escaped had apparently become closed, and the yellow ovisac presented, on section, the characteristic wavy outline. The Graafian follicle measured two-thirds of an inch in diameter. The other ovary exhibited, on section, one or two old corpora lutea.

Dr. J. Braxton Hicks called attention to the employment of anhydrous sulphate of zinc, cast into sticks of various sizes and lengths, for the treatment of those states of the canal of the uterus which require styptics, such as cervical leucorrhœa, and turgid vascular conditions of the mucous membrane, frequently giving rise to menorrhagia. The application of solid agents to the canal, Dr. H. considers much more satisfactory than the use of fluid preparations which soon after their injection flow too readily away, and cannot overcome the resistance of the thick mucous secretion lining the mucous membrane.

Dr. G. Hewitt read a paper on the subject of "Menstruation during Pregnancy." It is well known that, especially in the early months of pregnancy, a bloody discharge per vaginam occasionally takes place, and in a few rare cases with perfect regularity. In some instances Dr. H. believes that a twin conception having occurred, one of the embryos perishes within the first one or two months, causing the discharge of the amniotic fluid belonging to the blighted fœtus, mixed with, or succeeded by blood from the separation of the membranes from the uterus. A subsequent flow, within the succeeding three or four weeks, may be caused by the escape of more or less blood from the decidua, as yet uncovered by the extension of the membranes of the surviving fœtus. Be this true or not, it is most reasonable to suppose, Dr. H. believes, that in the majority of cases of menstruation during pregnancy, the source of the blood is the same as in ordinary menstruation; that is, the surface of the decidua. "During the early months of pregnancy, and prior to the time at which the decidual chamber is abolished by the adhesion or rather apposition of the decidua reflexa to the decidua vera, there is nothing to interfere either with the exudation of blood from the surface in question, or with its escape through the os uteri." Menstruation during pregnancy is due therefore to a non-adhesion of the two decidua, in connection with an unusual tendency to exudation of blood from the surface of the decidua vera. This explanation will account for the asserted occurrence of menstruation during the whole period of gestation. Slight or considerable losses of blood may occur during pregnancy from the presence of disease, or from accidental and partial separation of the ovum from the walls of the uterus. In such cases the discharge always takes place at irregular intervals.

Mr. Robert Ellis read a paper on the production of "Anæsthesia by Mixed Vapours," as a means of increasing the safety of the practice; and described a new method of preparing and administering the mixed vapours, with the view to the production of insensibility, when such is desired in the introduction of this new method.

In a paper by R. F. Battye, Esq., a short examination is entered into of "Certain Uterine Affections, especially those accompanied with Leucorrhœal Discharge, in their relation to Phthisis Pulmonalis," with the histories of nine cases. Mr. B. remarks that the number of cases given are exceedingly small; he believes them, however, to be sufficiently varied to give an explanation of the fact that in some way or other there exists between the uterus, or generative organ, and the lungs, a mutual functional relationship which, if it be disturbed,

causes them to act upon each other for good or evil. Hence, in studying the disease of one class of organs, more remote organs must not be passed by as having no relation to each other.

To attempt any statistical estimate of the percentage of cases of consumption preceded with leucorrhœa would be in the present state of our knowledge, according to Mr. B., presumptuous, but from past observations, he believes that the cases of consumption preceded by leucorrhœa for one or more years, before tubercle actually presents itself in the lungs, is not probably under fifty per cent., in females under 18 to 40 years of age. Future experience can alone decide upon the importance to be attached to particular morbid conditions tending to retard or develop so formidable a disease as phthisis pulmonalis.

Dr. Meadows related a case of hypertrophy of the labium, which commenced suddenly after the birth of her second child, in a married female, 27 years of age, who had always enjoyed good health, with the exception that she had been subject to psoriasis from the time her catamenia had appeared in her fourteenth year. The third year after the hypertrophy appeared, the left labium was of the size of the fist, while the entire mons was much thickened, indurated, and brawny-looking. The entire labium was removed with an elliptical portion of the mons. The patient ultimately recovered; only some slight enlargement of the left labium remaining.

Dr. E. J. TILT contributes a paper on the "Extreme Surgical Tendencies of Uterine Pathologists; and on the Division of the Cervix Uteri." This very excellent contribution has been already noticed in the Quarterly Summary of our Journal.

Dr. BRUNTON showed a placenta, containing in its centre a round tumour about the size of a small egg, which he had removed a few days before from a healthy primiparous young woman.

A curious, and so far as our knowledge extends, a unique "Case of Prolapsed Placenta," is related by Dr. C. SMUTS. The peculiarity of the case consists in the fact that a great part of the placenta prolapsed, attended with pain and hemorrhage, and after remaining exposed outside the vulva for more than 48 hours, was retracted spontaneously within the uterus beyond the reach of the exploring finger. Within a few hours after the retraction a healthy child was born, followed immediately by the expulsion of the placenta. There can be no doubt, Dr. S. remarks, that the protruding tumour was really composed of part of the placenta.

Mr. J. T. MITCHELL relates the history of a "Case of Early and Entirely Detached Placenta, during Labor, producing Internal and Concealed Hemorrhage," of which the patient died soon after. The cause of the detachment of the placenta in this case is involved in no little obscurity.

Mr. ROBERT DUNN relates a fatal case of "Concealed Accidental Hemorrhage, occurring at the Eighth Month of Pregnancy." In the discussion to which this paper gave rise, Dr. Brunton maintained that the chief diagnostic symptoms of accidental concealed hemorrhage are: 1st, sudden collapse and fainting, with continuance of this state; 2d, intense continuous stretching pain, and the tense state of the membranes, also continuous. Dr. Hicks thought that with our improved means of practice, we hardly ought to be so helpless in these cases as is generally supposed. With the power we possess of dilating the cervix with the apparatus of Dr. Barnes, we are enabled within an hour or two, to either apply the forceps, or turn the fœtus and deliver; or, should rapid delivery not be judicious, we could, at least, detach the placenta, and thereby remove the local tension from the uterus.

For a notice of the paper of Dr. Routh, which follows, "On a New Mode of Treating Epithelial Cancer of the Cervix Uteri and its Cavity," we refer our readers to the "Quarterly Summary," of a preceding number of this Journal.

Dr. W. S. PLAYFAIR discusses the "Mechanism and Management of Delivery in Cases of Double Monstrosity." The remarks of Dr. P. are replete with interest, and his account of the mechanism of labour in the cases referred to, and the directions for the proper management of these cases during parturition, are no doubt correct. But there is a difficulty of putting the latter into practice at a sufficiently early period, resulting from the fact that it is not, in even the

majority of cases, possible to detect, in cases of monstrosity in the fœtus the presence of such monstrosity and its exact nature.

Dr. Grailly Hewitt exhibited a "Specimen of Monstrosity," in a female fœtus, in which the cranial vault was entirely wanting. A thin loose membrane extended over the base of the cranium to the vertebræ. The upper portion of the spinal column extended almost to the forehead. The limbs were tolerably well formed. The skin of the abdomen anteriorly was deficient, and the stomach, intestines, spleen, and liver were quite external to the body.

A case is related by Dr. A. Wynn Williams, of "Hemorrhage due to Retained Placenta." The case is an interesting one, and not devoid of instruction. To understand it correctly the account of it given by Dr. W. must be studied in extenso.

The following very novel case is related by Mr. H. E. Eastlake. A lady, aged 26 years, married ten years; after her fourth labour came under the care of Mr. E., stating that since her second confinement in which she was delivered by the forceps, she had not been able to retain the feces, and that these, with wind, also frequently escaped per vaginam. On examination a laceration was detected involving the perineum, a portion of the posterior vaginal wall, and the sphincter ani. An operation was urged and submitted to. The pregnancy following the operation terminated in a miscarriage. When she had arrived at the fourth or fifth month of a sixth pregnancy, it was found that the normal calibre of the vagina had become greatly diminished; the result, of course, of the operation. It being feared that difficulty might result if she went her full time, the induction of labour at the seventh or eighth month was advised, but was not done. At the full period of confinement, Mr. E. was summoned, and found the whole of the right arm was protruding through the anal orifice. The head was in the first position, and low down. Strong uterine action going on, the midwife was directed to press back the arm steadily through the anal orifice as the head descended. The child was quickly born. It was a male, and showed no signs of life for two or three minutes, but was ultimately thoroughly resuscitated. The placenta was extracted without trouble. Mr. E. believes that the presentation was primarily a hand and head one; that as labour progressed the arm descended with the head, and was at length forced through a weak portion of the posterior vaginal wall, and in consequence escaped through the anus. The patient made a very tolerable recovery.

A paper on the "Pathology of Puerperal Eclampsia" was read by Dr. J. B. Hicks, with a contribution of the histories of four cases in illustration of the relationship between albuminuria, uræmia, and puerperal convulsions. The paper is a highly interesting and suggestive one.

The discovery of the frequent occurrence of albumen in the urine of patients suffering from puerperal eclampsia led, at first, to the supposition that it was constantly present, and that the convulsions were owing to the uræmia so commonly believed to be associated with albuminuria. Dr. H. adduces, however, cases to show that up to the time of the occurrence of the first convulsive symptoms, and even for a short time afterwards, the urine is perfectly free from albumen, and that no evidence of anasarca occurs before; but that serious kidney symptoms begin shortly after to arise, as indicated by the condition of the urine. Thus a woman approaches the latter stage of pregnancy, apparently in perfect health, without œdema, and without albuminuria, and is seized suddenly with an epileptiform attack. After the lapse of a certain time, the presence of albumen is detected in the urine, at first in small quantities, but shortly in profusion. Now, blood-globules, waxy and epithelium casts are found in it. The urine becomes next scanty, of high specific gravity, and loaded with very high coloured crystals of lithic acid. The case which is now one of acute desquamative nephritis, may terminate in gradual recovery, the albumen slowly disappearing; or, death may ensue from the intensity of the original attack, or from the retention of urea, &c., in the system, in consequence of the mischief done to the kidneys. If this be a correct exposition of the course of the disease as it usually occurs; if albumen in the urine be an indication of uræmia, and the experiments adduced by Dr. H., showing that twenty-four hours, at least, must elapse after the kidneys have ceased to act, before symptoms of uræmic

poisoning can occur, are correct, then it follows that the convulsions cannot be owing to uræmia, at least, as the result of kidney disease. The only modes, therefore, of explaining the occurrence of the acute nephritis in cases of puerperal eclampsia, is in one of these three ways: either, 1st. That the convulsions themselves are the cause of the nephritis; or 2d. That the nephritis and convulsions are produced by the same cause, as for instance, some detrimental ingredient circulating in the blood, irritating both the cerebro-spinal system and other organs at the same time; or 3d. That the highly congested state of the venous system, as is produced by the spasm of the glottis in eclampsia, is able to produce the kidney complication. Such seems to Dr. H. to be the case as it at present stands, and further than this our present knowledge will scarcely allow us to proceed. To arrive at a positive decision, closer and more extended series of observation must furnish us with the necessary data to clear up satisfactorily the question.

The history of a case of "Double Placenta," with remarks, was communicated by Dr. G. HEWITT. The case is, in several points of view, an interesting one. The uterus contained but one fœtus, which was provided with a single umbilical cord. This was divided at its junction with the membranes, into two branches, each of which ran to a separate and distinct placenta.

A remarkable case of "Placenta Prævia," was related by Mr. G. ROPER. The most interesting features of this case were: the absence of hemorrhage, and the influence of the cervical position of the placenta in causing lingering labour. The same influence by causing deflexion of the fœtal head is a source of the frequency of transverse presentation in connection with placenta prævia. The arrest and impaction of the head at the pelvic brim by means of the placenta is also to be enumerated as another interesting feature of the case. The first three of these conditions have been, as Dr. R. remarks, elucidated by Dr. Barnes in his work on placenta prævia, but Dr. R. is not acquainted with any recorded case in which the placenta was a cause of obstruction at the brim.

Dr. W. NEWMAN relates a case of "Cæsarean Section," with recovery of the mother—child not viable.

A very able paper on "The Anatomical Relations between the Mother and Fœtus," was read by Dr. H. MADGE. Some seven or eight years ago, Dr. M. published a work on the non-existence of utero-placental bloodvessels.

The object of the paper before us is simply to establish the correctness of the conclusions given in the above work by further considerations and facts.

The closing paper of the present volume is on "Excision of the Clitoris as a Cure for Hysteria, Epilepsy, Insanity, etc.," by Dr. THOMAS H. TANNER. In the commencement of the present century the operation of clitoridectomy was introduced for the cure of nymphomania; more recently it has been laid down as a pathological law that many of the functional disorders of women, as well as some severe organic lesions, are due to peripheral excitement of the pudic nerve; consequently, as by the removal of the clitoris it is supposed by many that one of the principal causes by which such peripheral excitement of the pudic nerve is kept up; and by the removal of that organ such excitement may be got rid of, the operation has, therefore, been proposed for the cure or amelioration of a tolerably long list of nervous affections occurring in women. The question is cautiously examined in its more prominent bearings by Dr. T., and by the facts and reasons adduced by him it is shown that the removal of the clitoris is of very doubtful propriety, and that the benefits which have been claimed for it as an important curative means are without any reliable evidence in their support.

The *Transactions* embrace the description of several instruments either obstetrical or for the treatment of certain morbid conditions of the uterine organs. We pass these by. Descriptions of instruments without drawings give, at best, but an imperfect idea of their construction. D. F. C.

ART. XXXI.—*The Microscope in its Application to Practical Medicine.* By LIONEL S. BEALE, M. B., F. R. S., Physician to King's College Hospital, Professor of Physiology and of General and Morbid Anatomy in King's College, London, &c. &c. Third edition, with numerous original illustrations. 8vo. pp. 320. London: John Churchill & Sons, 1867.

DR. BEALE has become so well known to the working members of the medical profession by his untiring zeal and patient personal labours in minute physiological and pathological anatomy, and by his boldness in attacking received doctrines, that any original papers announced by him, or new editions of his former works containing additional matter, attract the greatest interest. The present volume is no exception to this statement, and we can unhesitatingly say that we consider it one of the most useful books to the practical physician which has appeared during the past ten years (l. c.), taking an equal rank with such works as *Todd and Bowman's Physiological Anatomy* and *Virchow's Cellular Pathology*, though the book in the author's own opinion is still far from what he desires it to be. In its present condition "it contains fifty-eight plates, which have been arranged and printed with the greatest care. The text has been revised throughout, and nearly 100 pages of new matter added." We regret, however, that in order to accomplish this without greatly augmenting the size and price of the book, the chapters on the structures of the healthy organs and tissues have been omitted. For although, as stated in the preface, this part of the subject is treated of in many other works, and much may appear in a subsequent edition of his work on the tissues, yet the directions given with regard to the best methods of preparation of these structures for microscopic examination are not found elsewhere in English works, and would scarcely be in place in Dr. Beale's book on the structure and growth of tissues.

Part I. embraces a consideration of the apparatus necessary for the examination of objects of clinical interest, of the practical operations necessary for their demonstration, and of recording the appearances observed. This includes an enumeration, and, in some instances, brief description of such apparatus, with reference to the author's book *How to Work the Microscope*, for particular details. Of the operations, none are more important than those pertaining to the drawing, engraving, and measuring of objects. Dr. Beale has done much to excite an interest in this department. The absolute necessity of drawings, to enable both the student and practitioner to understand written descriptions of appearances, has long been insisted upon by him, as well as the necessity of *every* observer's becoming sufficiently proficient to trace appearances by means of drawing prisms. So, also, with regard to measuring objects, and indicating the degree of amplification shown in the drawing, by brief and appropriate means. Thus, to indicate that an object has been magnified 400 diameters place in appropriate position near the drawing ×400, or protract the stage micrometer magnified in the same degree in a similar situation. The effect of Dr. Beale's teachings may be estimated by the fact that rarely, at the present day, do we find a drawing of microscopal objects appear in any of the first class journals that has not its degree of amplification indicated in one of the ways described. So that the camera lucida and stage micrometer may be looked upon as absolutely essential articles of accessory apparatus to the microscope.

In the methods of examining tissues are included the processes of hardening and softening tissues, making sections and preserving tissues, and the process of injecting. The latter is so described as to be rendered practicable by the most inexpert student. Dr. Beale's views with regard to the relative value of opaque and transparent injections are well known, and our own limited experience has led us to similar conclusions, especially in the use of the Prussian blue transparent fluid. With the carmine we have been less successful, from the disposition of the latter to infiltrate and stain the tissues with which it may come in contact. We have seen very beautiful transparent carmine injections made and mounted in balsam by Mr. Geo. Roberts, a student of medicine in this city. He, however, pursued the plan recommended by Hyrtl of

suspending the carmine in size, instead of the glycerine mixture of Beale. The facility with which transparent injections can be viewed with the highest powers of the microscope, and with which the vessels can be studied in relation to intervening tissues, gives them a palpable superiority. Dr. Beale's new method for preparing all healthy and morbid tissues, tumours, &c., for microscopical examination under the highest powers, first published in the third edition of *How to Work with the Microscope*, August, 1864, but adopted by the author years previously, is given with such minuteness that it may be followed by any experimenter, and observers are invited to make use of it.

The directions given for the microscopical and chemical examination of the fluids and solids of the body are very precise, and cannot fail to be of the greatest utility to the practitioner. A great deal is here found, succinctly stated, for which much time must otherwise be spent by the practical physician in looking up in works on physiological and organic chemistry. Some novel points are introduced in methods for detecting living or lifeless particles in the breath and atmosphere. Dr. Beale "thinks it very likely that if such experiments were conducted with extreme care, some most valuable facts might be discovered with regard to contagious diseases," and has "no doubt that ere long we shall be able to catch and preserve the living particles of *contagium* on their way from the infected to the sound organism." This is expecting a great deal, but Dr. Beale does not make the statement without being aware of the practical difficulties to be met with in attempting to attain such an end, for he has contended against them in his experimental investigations with regard to the cattle plague in England, when he was surprised to find large fragments of the food, starch corpuscles, particles somewhat resembling those of soot suspended in the air of London rooms, three or more different kinds of fungi sporules, bacteria, fragments of epithelium, and a number of bodies he was unable to identify. These all collected upon a clean plate of glass, moistened with pure glycerine, which was held for a few moments in the current of the animal's breath.

Some very interesting pages are introduced in Chapter II. upon the microscopical examination of living things by the highest powers of the microscope. Dr. Beale arranges the movements occurring in living beings in two divisions:—

1. *Primary or vital movements*—affecting matter in the living state only, and occurring in every direction; as seen in the amœba, white blood corpuscles, mucous and pus corpuscles, chyle and lymph corpuscles, ova, and in germinal or living matter generally. Among these he includes also cyclosis, or the rotation of the contents of cells.

2. *Secondary movements*—the consequence of vital movements, or of other phenomena, affecting matter which is not in a living state, as ciliary movements, muscular movements, molecular movements, which infect all insoluble particles in a minute state of division, be they "*living*" or "*non-living*," when suspended in a fluid not too viscid, and lastly, movements of solid particles suspended in fluid in cells caused by currents in the fluid, as the pigmentary matter in the pigment cells of the frog, due to the motion of the fluid as it passes into or out of the cell through its permeable wall. (p. 62.)

To study the movements in germinal matter, as exhibited in the pus corpuscle, a $\frac{1}{12}$ of an inch object glass is required, and it is often necessary to examine one particular corpuscle half a minute or more; while even with this power the changes are sometimes so slow as to cause the observer who looks at them for the first time to be doubtful of their existence. "Under the $\frac{1}{16}$, $\frac{1}{25}$, $\frac{1}{50}$ the alteration of form can be seen very distinctly, and there are few things more wonderful, or which will furnish more interesting matter for careful thought and for valuable and useful speculation." We fully coincide with him in his conception of the interest and wonder of such movements; yet it is somewhat disappointing to be told that they can barely be seen by a $\frac{1}{12}$, and only satisfactorily by a $\frac{1}{16}$, $\frac{1}{25}$, or $\frac{1}{25}$, the lowest of which powers are, from their costliness, beyond the reach of many of us. We have, however, studied what we supposed to be the movement of the white corpuscle with a $\frac{1}{2}$ object glass of an angle of aperture of but 75°. Some beautiful drawings are executed by Dr. Beale illustrating these movements.

Spectrum microscopic analysis which has recently become so valuable in legal

medicine, is also appropriately considered by Dr. Beale, and drawings of suitable apparatus accompany his descriptions.

Part II. includes the microscopical characters of the structural elements, of the deposits from fluids, of living cells in health and disease, and of animal parasites. The simplest structural elements—*granules, globules, cells, fibres,* and *membranes*—are defined as in the author's work on the tissues, and the importance of a uniform terminology insisted upon. Dr. Beale's views with regard to all these elements were given at length in a review of his book *On the Structure and Growth of the Tissues*, in the January number of this Journal, and need not be again referred to in this brief notice. In his chapter on lymph, chyle, blood, &c., some new observations on the blood corpuscle are introduced, in which he defines the red corpuscle of man and mammalia as consisting "of a mass of soft, viscid matter, perhaps of the consistence of treacle, composed of *hæmatocrystallin*. It is at least in certain states soluble in water, but is only dissolved by serum and the fluid part of the blood very slowly. The outer part of this matter is of firmer consistence than the interior, especially in the older corpuscles. When the latter are placed in water, the more soluble matter is dissolved, leaving the harder, external portion. By the action of many chemical reagents, the outer part of the red corpuscle is condensed. These and other appearances have led observers generally to the conclusion that the red corpuscle was a cell containing fluid contents, and so firm has been the conviction that this was so, that the rupture of the 'cell' and the escape of the contents have been spoken of as if they had actually occurred and had been seen. That the red corpuscle is not a cell is proved conclusively by the following facts:—

1. A blood corpuscle may be divided into many smaller portions, every one of which assumes the spherical or spheroidal form, and in many cases become stellate.

2. The mass of germinal matter in the case of the nucleated corpuscle of the frog and other vertebrates, or a portion of it, may pass right through the red viscid material of which the outer part of the corpuscle is composed, without the rupture of any membrane, just as a solid particle might pass through treacle or molten pitch.

3. A red corpuscle from guinea pig's blood assumes the crystalline form very readily without the addition of any reagent. The process may be watched under the microscope, and a single corpuscle seen to become a single crystal, or by the application of a gentle heat a corpuscle may be broken up into several smaller portions, every one of which becomes a tetrahedral crystal.

4. Several blood corpuscles under certain circumstances run together, forming a soft, homogeneous, viscid mass, in which nothing like cell-walls, or the remains of such structures, can be seen, and which undergoes crystallization in every part without exhibiting indications of cell-walls anywhere.

5. When water is added to blood corpuscles, they swell up just as a piece of jelly would swell up, but they do not burst, as generally stated. No doubt soluble matters are dissolved out, but as the water evaporates the corpuscles assume their previous form, although they appear paler than before." (p. 169.)

It has been thought worth while to introduce these reasons of Beale for considering the blood corpuscle to be without a cell-wall, as there are many who oppose him. Among those who agree with Beale, however, is Dr. Dalton, of New York, and Dr. Carpenter is also recently disposed to accept his views. It will be recollected that the reasons generally assigned by those believing in the existence of a cell-wall are—1. The crenated form assumed by the blood corpuscle when placed in a fluid of greater density than its contents, as the result of an exosmosis of those contents, whereby the cavity formed by the wall becomes too large, and the wall folds upon itself. 2. The resumption of the natural shape when the corpuscle thus crenated is placed in a fluid of less density than its contents. 3. The appearance even of a double membrane when the red corpuscle is treated with tannin. 4. A behaviour on the addition of reagents similar to that exhibited by other bodies acknowledged to be cells. 5. Their uniformity of size. 6. The asserted detection of shreds of membrane after the corpuscle has burst. It will be seen that in one or two instances the same reason is alleged for the support of both sides of the question, which, of

course, results from a different interpretation of appearances. Without pretending to decide the question, we are inclined to coincide with Drs. Beale, Carpenter, and Dalton.

Dr. Beale agrees with most physiologists that the white corpuscle originates in the lymph and chyle corpuscle, and that the red corpuscle originates in the white corpuscle, but believes the red corpuscle to be *lifeless*, whereas the white corpuscle is considered to be a *living corpuscle*, composed of living or germinal matter. He says: "The living germinal matter becomes gradually resolved into the red, lifeless hæmato-crystallin, which accumulates, and probably into other substances which escape. The hæmato-crystallin is probably diffused through the germinal matter, and this latter being perfectly transparent and colourless, cannot be distinguished. Shortly before death, however, a change occurs in these young corpuscles, the germinal matter moves away, leaving the lifeless coloured material behind." (p. 171.)

If there is any point in which Dr. Beale's theory, as ordinarily interpreted, is weak, it is with regard to the *lifeless* character of the so-called formed material. If by lifeless he intends merely to convey that it has lost all power of converting pabulum into structure, as we interpret him, it is then truly dead; but a structure can scarcely be considered dead so long as it possesses function, and as he admits that the *formed tissue*, forming the great mass of the structure of the adult frame, as in bone, tendon, nerve, muscle, &c., is that part which possesses function, and that through which the functions of the body are carried on, then it is not dead and should not be spoken of as such.

It should not be omitted that Dr. Beale also considers it probable that the masses of germinal matter (nuclei) which project into the interior of capillary vessels may also give origin to the white corpuscles.

The microscopic examination of *sputa*, and especially of the sputa of phthisis, is appropriately considered. The ease with which fragments of elastic tissue of the lung may be detected in the sputa of phthisis, even where physical signs are not marked, makes it a matter of great importance that young practitioners especially should make themselves able to recognize the delicate, wreath-like fragments of this tissue. By the aid of acetic acid, which renders the other structures transparent, these curling fibres, if present, become very distinct—a fact which ought not to be overlooked. Dr. Beale gives, on p. 190, an exhaustive list of references for those who desire to make a special study of the microscopical characters of sputum.

Some new observations are introduced on the pus corpuscle with which many of the readers of this Journal are familiar. Suffice it that he considers the pus corpuscle to be a mass of living germinal matter, which has descended continuously from the normal germinal matter of the body, as the result of an excess of pabulum, and that pus is not formed in connective tissue corpusles and epithelial cells only, as contended by Virchow, but that it *may be derived from ang germinal matter in the body*. He believes, also, that there is no true cell-wall in the case of ordinary pus, which he considers "is proved by the fact that protrusions of the matter of which pus corpuscles consist, may occur upon every part of the surface, and not only so, but some of these protruded portions, after moving a considerable distance from the mass, become disconnected from it, and thus new corpuscles are formed. It is in this way that the very rapid multiplication of pus corpuscles is effected."

With regard to *tubercle*, Dr. Beale considers it extremely difficult to decide with any certainty its mode of origin. He considers it "probable that tubercle results from the multiplication of the masses of germinal matter which have passed through the capillary walls from the blood, or is developed from the masses of germinal matter usually termed nuclei, in connection with the capillary walls."

In the chapter on urine and urinary deposits, little new matter is introduced, though some reliable cuts are added to the plates illustrating the subject.

In the chapter on morbid growths, Dr. Beale does not pretend more than to give the most important microscopic characters of some of those which frequently come under the notice of the practitioner, but refers to appropriate works. He makes no classification, and considers that "we know too little of

the anatomy, mode of development, and history of morbid growths to attempt anything like a systematic classification." To Dr. Beale it would seem "much more important that we should endeavour to give good drawings of the structure of the growths, with a short description of their most important characters, than attempt to give them names, still less to hide our ignorance of their real nature by the use of such imposing but ill-defined terms as *fibro-cystic sarcoma, cylindroma, cholesteatoma*, and many others, which merely embrace one or two characters, and may, with much reason, include a number of structures essentially distinct from the one in question. Rather let us say that a tumour is like brain or marrow, or that it has a fibrous, cartilaginous, vascular, granular, or osseous appearance; or that it contains plates of cholesterine, cysts, &c.; or that it is composed of fibrous tissue, epithelium, cancer cells, mucous tissue, a gum-like material, &c."

Some very interesting and suggestive remarks are introduced by Dr. Beale on the origin of morbid growths, for which we must refer readers to the original work, as any attempt to condense them in what is intended as a mere bibliographical notice would probably tend to confuse rather than enlighten. It might be stated, however, that there appears to be no essential difference between the ideas of the author and those of Virchow as to such origin; the minute masses of germinal matter connected with normal tissue, which Beale believes to be invariably the source or origin of all morbid growths corresponding to the connective tissue corpuscles of the former author. By both authors, at least, some part of normal structure is considered the starting point of such new formations. Indeed we are struck with the similarity of the views above quoted with regard to classification and nomenclature to those of Virchow upon the same subject, as given in the last chapter of Cellular Pathology.

The concluding chapter on animal and vegetable parasites is a useful one to the practitioner. Much new matter is introduced with many very beautiful and accurate illustrations.

The latter include drawings of trichinæ spirales in different stages of growth, different specimens of tæniæ and echinococci, the entozoon-like bodies found by Dr. Beale in immense numbers in the muscles of animals destroyed by the cattle plague, and of the various forms of fungi characteristic of the different vegetable parasitic diseases. The latter, being accompanied by appropriate descriptions, will be of very great assistance to the young practitioner in his diagnosis of these varieties of skin disease.

We must not omit an allusion to the suggestions for taking cases and making post-mortems appended to the volume. These were published by the author in No. IX. of the *Archives of Medicine*, but are quite worth repeating in connection with a practical work like the *Microscope in Clinical Medicine*. They supply a want which has long been felt by the resident physicians of our hospitals, and if followed faithfully cannot but make them good observers.

In conclusion, we may be permitted to allude to a plan pursued by Dr. Beale which may not be without some advantages, but is also liable to some objection. This is the practice of republishing much of the same matter in his different works. Thus we have his method of preparation of all tissues for microscopical examination, under the highest powers, published in *How to Work the Microscope*, *The Microscope in Clinical Medicine*, and Dr. Beale's new edition of *Todd & Bowman's Physiological Anatomy*. So the account of reagents, with their effects upon the different tissues, is printed in the two works, *How to Work the Microscope*, and *The Microscope in Clinical Medicine*. While the simplest structural elements met with in health and disease (granules, globules, cells, fibres, and membranes) are defined in the three works referred to, and also in the author's work *On the Structure and Growth of Tissues*.

The importance of a uniform nomenclature, and of the indication of the same objects by the same names, is so great that probably the latter could not be repeated too often, and Dr. Beale considers his method of the preparation of the tissues so essential for obtaining correct ideas of structure, that he may be justified in repeating it, but the two works on the microscope, at least, should be complemental to each other, and much valuable space would be gained by omitting such reprint. Were the points alluded to published in but one of the

two works on the microscope, more than sufficient space would remain for publishing the valuable account of the microscopic appearances of the healthy tissues and organs already referred to as omitted in this edition from a want of space.

We do not find in this edition that repetition of the same figures in different plates complained of by the author of the bibliographical notice of the second edition in Vol. XXXVII. of this Journal. We find but two or three of the cuts duplicated in this edition, nor do we consider any of them unnecessary. The typography and general execution of the book, except the binding, are in the best style of Churchill & Sons. J. T.

ART. XXXII.—*The Progress of Acupressure.*

1. *Acupressure: An Excellent Method of Arresting Surgical Hemorrhage, and of Accelerating the Healing of Wounds.* By WILLIAM PIRRIE, C. M., M. D., A. M., F. R. S. E., &c. &c.; and WILLIAM KEITH, M. R. C. S. E., M. D., &c. &c. Illustrated by engravings on wood. Royal 8vo. pp. 190. London: John Churchill & Sons. 1867.
2. *Notes on the Progress of Acupressure.* By Sir J. Y. SIMPSON, Bart., M. D., D. C. L., &c. 8vo. pp. 24. Edinburgh: Adam and Charles Black.
3. *Medical Times and Gazette*, 1865 and 1866, *passim*.

"*Tetigisti Acu.*" PLAUT. *Rud.* V. 2.

1. THE eminent surgeons of Aberdeen, whose names appear upon the volume placed first in our list, have done, perhaps, more than any others (with the exception of its introducer) to spread the use of acupressure, and to induce other surgeons, in various parts of the world, to give it an unprejudiced trial. They have now offered to the profession the results of their united experience in its employment, and in the volume before us present what may be considered a fair statement of the claims to superiority on the part of the new method over the old. Prof. Pirrie, who has contributed rather more than three-fourths of the volume, goes fully into the history and mechanism of the various methods now in use for controlling hemorrhage by acupressure, and gives details of thirty-two cases of various nature in which he has used the method in question. These cases are afterwards tabulated (on page 134), giving the nature of the operation, the age of the patient, the method in which acupressure was used, and the number of hours during which the pins or needles were permitted to remain. We regret that this table was not completed by adding the nature of the disease for which each operation was performed, the result in each case, and the time it was thought necessary to keep the patient in hospital before the wound was healed with sufficient firmness to allow of his or her discharge. We have taken the trouble to construct a table (for our own edification), supplying these deficiencies, as far as possible, from the detailed histories in the preceding pages of the volume, and must confess that the advantages of acupressure over deligation have appeared less startling when the cases were thus viewed than when Prof. Pirrie's table alone was consulted. Thus, of twelve cases of amputation, eleven were for disease, and only one (primary) for accident. Eight of the twelve were in children not over fifteen years of age, and three of the twelve (25 per cent.) were followed by a fatal result. The average age of the twelve was twenty-two years and five months. Now, looking at the matter from a strictly clinical point of view, considering the nature of the cases for which the operations were performed (amputations for pathological, being universally conceded to be less dangerous than those for traumatic causes), and the great advantage presented by the youth of the majority of the patients, it can scarcely be claimed that these results were *unusually* favourable, or that it would have been presumptuous to hope for as much success had the arteries been tied, instead of twisted or squeezed.

Again, the only case of amputation in which the length of time occupied in the patient's convalescence is definitely stated, is that of a little girl aged seven years, whose arm was amputated in its upper part for an injury received by being run over by a cart. The operation was performed at once, and it is expressly stated that "there were scarcely any symptoms of shock" from the accident (p. 83). Now, although this was considered "a perfect example of immediate union, or union by the first intention" (p. 85), the child was not allowed to leave her bed for two weeks, and was not discharged from the hospital until the thirty-second day. May we not deem it a pertinent question to ask why was the cure so delayed, when there was not a single drop of pus seen in its progress?—and if (as we suppose), it was thought necessary to retain the patient so long that the "immediate union" might acquire firmness and solidity, wherein was the great advantage over the use of the ligature, by which, probably, every surgeon has had, not unfrequently, quite as satisfactory and rapid recoveries?

Dr. Keith's portion of the volume under examination gives twelve cases in which he has used acupressure, with full details and judicious remarks. We observe that his fifth case is stated in the summary (p. 150) to have proved fatal from pyæmia; a statement that must have escaped Prof. Pirrie's attention, or he could not have written as he has done on page 141.

Several of Messrs. Pirrie and Keith's cases were attacked with erysipelas, several with sloughing, one proved fatal from pyæmia, and two suffered from hemorrhage—consecutive in one case, and secondary in the other—besides a third, in which hemorrhage recurred on the premature withdrawal of the pin.

The book is handsomely though carelessly printed, and is well illustrated—rather more plentifully, however, than seems to us desirable, as most of the cuts turn up unexpectedly in two or three different parts of the volume.

2. Sir James Y. Simpson's pamphlet presents the same flowing style, elegant diction, and (may we be excused for saying so) slight inaccuracy of statement that characterized his delightful volume on acupressure, published in 1864. Thus we read on pages 8 and 9 (note) of the pamphlet before us: "Dr. Pirrie has used acupressure in 32 of the major operations of surgery, and in many minor ones. In only one case did he meet with secondary, or rather with intermediary hemorrhage." Now, the fact is, that Dr. Pirrie reports hemorrhage in *three* cases, not in *one* only, numbered respectively Cases 7, 11, and 24 of his series. Again, we read on the last page, that "in the work of Prof. Pirrie and Dr. Keith, above eighty capital operations are reported as treated by them and Dr. Fiddes with acupressure." We have failed to find more than fifty-four cases detailed in the work in question (including ten of Dr. Fiddes', which are merely noted in a table on page 135), though a few others are referred to in passing; nor should we designate a case of hemorrhage from sloughing paronychia of the thumb (Case 20), nor cases of incised wounds (Cases 12 and 21), nor even cases of excision of the breast or testicle, as "capital operations."

3. What shall we say of the great "acupressure controversy," which raged so furiously among our Transatlantic brethren a year ago? Let us be thankful that the medical profession in America has been spared such "public executions," angry replies, and still more angry rejoinders, as filled the pages of the British medical journals for so many months; and let us hope that when the smoke of battle shall have finally cleared away from the acupressure question, we may have an opportunity to obtain an impartial and unprejudiced view of the real merits and advantages of Prof. Simpson's admirable invention. For that it is an admirable invention—that it has real merits and great advantages (in certain cases) no one who has used acupressure can for a moment doubt. The rapidity and ease with which it can be applied, and the fact that the surgeon can use it without any assistant whatever, constitute advantages which cannot be gainsaid; and we should no more hesitate to receive acupressure from an obstetrician than we did to receive ether from a dentist; but the error which Prof. Simpson and his followers have committed, it seems to us, has been in claiming too much for the needle, and throwing too much obloquy on the

ligature. Prof. Pirrie has himself seen this, and has come nearer to what we consider a correct "appreciation" of acupressure than any others who have written on the subject. For, in fact, if the "objectionable and deleterious effects of the ligature" (*Simpson on Acupressure*, p. 450) are so marked as is claimed, why should Prof. Pirrie recommend deligation in preference to acupressure in any cases whatever? (pp. 143 and 144.) Why, because a wound is likely to heal by granulation, deliberately place "some minute morsels of dead flesh into the raw cavity or upon the raw sides" of such wound? (*Simpson, op. cit.*, p. 43.)

"We cannot bid adieu to the ligature," says Prof. Pirrie; and in terminating this notice with the concluding words of his essay, while we must continue to think that the ligature will remain as it has for so many years the method *par excellence* for suppressing hemorrhage, we beg leave to add our entire assent to the sentiment of the eminent Aberdeen Professor, when he says: "While many great operations have such a high rate of mortality in the practice of *all* good surgeons in *all* countries, it seems a duty not 'to rest and be thankful,' but to receive, and gratefully to adopt, acupressure, in the hope that some of the sources of danger may be modified or entirely removed." J. A., JR.

ART. XXXIII. – *Behandlung der Croupoesen Pneumonie mit Veratrum-Præparaten.* Von Dr. THEODOR KOCHER. 8vo. pp. 96. Würzburg, 1866. *Treatment of Anaplastic Pneumonia, by Preparations of Veratrum.* By Dr. THEODORE KOCHER, of Bern.

THERE would appear to be, among the medical practitioners of the present day, a very strong inclination to discard entirely bloodletting in all forms of disease. It is unquestionable that the use of the lancet in inflammations of the lungs has of late years become the exception instead, as it was formerly, the rule. We cannot at present enter upon an examination of the cause and propriety of this radical change in the therapeutics of the important disease in question, and shall be obliged to confine our notice to the subject of Dr. Kocher's treatise, the treatment of pneumonia by preparations of veratrum.

Many of the physicians of this country and of Europe advocate the trusting to the veratrum alone the treatment of pneumonia, especially those forms of the disease in which the exudations produced by the local inflammation is what Rokitansky denominates croupose matter instead of plastic lymph.

In the work before us this plan of treatment is very ably defended, and its superiority strongly urged. The facts adduced by the author in evidence of the efficacy of veratrum as a remedy in pneumonia are mainly drawn from the study of some sixty cases submitted to the action of that agent in the Clinic of Professer Biermer, in the hospital of Berne. A brief sketch is given of these cases, their history, symptoms, and march, in the first chapter of the present treatise.

Dr. Kocher does not advocate the veratrum as a specific in pneumonia, but he believes that he is warranted in urging it upon the profession as an important and prominent remedy in the rational treatment of the disease.

According to the observations of Dr. K., the veratrum has a direct influence upon the febrile stage of pneumonic inflammation; diminishing promptly all the symptoms which are necessarily attendant upon an acute febrile attack. He has found that when administered within the first twenty-four hours of the attack the increase of the fever is prevented and the fever is shortened in duration, and that in mild cases, when given even at a later period it arrests the extension of the local disease; while in all cases it hastens a favourable crisis of the fever, and the prompt solution of the inflammation.

During the acute stage, and under all the circumstances of the disease in ordinary cases, the use of the veratrum will be proper and beneficial. When the local disease is severe and rapidly increases in intensity and extent, in conjunction with the veratrum, bloodletting will be demanded.

In cases attended with severe local disease and a fever of a low type Dr. K. considers the veratrum to be contra-indicated.

There occasionally results from the employment of the remedy a sudden sinking of the powers of life. This may in general be prevented or remedied by the employment of stimulants. According to Dr. K., all the disagreeable results which are observed from the use of veratrum are commonly of only temporary duration.

The veratrum, we are informed, should be so given in cases of pneumonia that its effects may be reached with as much promptness as is consistent with safety. The requisite dose will vary according to the circumstances of each case, as well as with the age and condition of the patient, etc. It should, however, in all cases be sufficiently powerful to arrest the local disease as promptly as possible. The use of the remedy ought to be at once discontinued should it give rise to severe nausea, vomiting, or any symptom of disturbance of sensibility or motility, and also so soon as the pulse and the temperature of the patient's skin become normal.

We admit that the facts recorded by Dr. K. present the veratrum in a very fair light as a remedy in many cases of pneumonia; they fall very short, however, of convincing us of the propriety of trusting to its employment, unaided by an early and judicious use of the lancet, in an attack of pneumonia of much severity. D. F. C.

ART. XXXIV.—*Die Frage ueber die Heilbarkeit der Lungenphthisen; Historisch, Pathologisch und Therapeutisch untersucht.* Von Dr. JOH. BAPT. ULLERSPERGER. 8vo. pp. 275. Wurzburg, 1867.

The Question as to the Curability of Pulmonary Phthisis, Historically, Pathologically, and Therapeutically considered. By Dr. J. B. ULLERSPERGER.

THE work of Dr. Ullersperger is replete with interest, and comprises much that is of a highly instructive character. The various therapeutical means which have been proposed from time to time for the cure of pulmonary consumption are passed under review, and an attempt made to determine their respective value by comparing them with former and received opinions in respect to the etiology and pathology of tuberculosis, especially of the lungs. However much particular therapeutical means and agents may appear to have done good in the amelioration of some of the more prominent and distressing symptoms of pulmonary tuberculization, and in arresting for a time its fatal march, no evidence has been as yet adduced to convince us that there has been discovered a plan of treatment upon which we can rely for lessening the mortality of this formidable disease. Although we may admit, with Dr. U., that our acquaintance with the true, rational treatment of phthisis has advanced considerably within the last twenty or thirty years, still we are not yet enabled to confidently give a favourable prognosis in any case under any course of treatment.

Numerous facts upon record show that all the symptoms of consumption as well physical as physiological, have entirely disappeared, and that in many cases, where this has taken place and death has ensued years subsequently from other diseases, a post-mortem examination has shown beyond doubt the evidence of the existence in the lungs at some former period, of tubercular disease. Upon a careful analysis of these cases of the cure of pulmonary phthisis, the favourable termination of at least most of them is to be referred less to the therapeutical means employed than to the spontaneous concurrence of certain favourable conditions in the cases themselves. As, for example, the localization in the lungs of the tubercular deposit, the early softening of the deposit, and the early and entire discharge of the softened mass through the bronchi and trachea; enabling thus the walls of the cyst, in which it was contained, to coalesce without impairing to any perceptible extent the functions of the lung.

The annals of our profession would seem to prove that in its early stages

consumption may be arrested in its progress by a proper hygienic course, with the assistance of such therapeutic means as any intercurrent disease may call for. And we think that it can now be scarcely doubted that in the predisposed the development of pulmonary consumption may, with certainty, be prevented by the removal of the patient to a cool, dry, equable climate, allowing him daily active exercise in the open air, a rich, nourishing diet, and all other means adapted to promote a vigorous circulation, a prompt and healthy nutrition of every portion of the body, and the free and regular action of the emunctories. Every precaution should be taken to preserve the chest, lungs, and air-passages from irritation and inflammation. Mere tuberculization of the lungs is very commonly a very chronic affection, and with due precaution may exist for many years without producing any very serious inconvenience to the patient. But when the tuberculosed lung becomes inflamed, symptoms of the most serious character quickly occur, and the case runs on rapidly to a fatal termination.

The work of Dr. U., with all its merits, can lay but little claim to originality. The facts adduced by the author are chiefly derived from the observations of others. With commendable industry he has collected from every reliable source the materials made use of by him in the elucidation of the question discussed, and he has arranged them with skill so as to exhibit their respective bearings. The entire work is well worth an attentive study on the part of every physician familiar with the language in which it is written. D. F. C.

ART. XXXV.—*Lehrbuch der Ohrenheilkunde mit Einscluss der Anatomie des Ohres.* Von Dr. VON TRÖLTSCH, A. O., Professor der Medizin un der Universitat Wurzburg. Dritte, Ungearbeitete und Stark Vermehrte, Auflage. Wurzburg, 1867. 8vo. pp. 438.

A Manual of Aural Medicine, including the Anatomy of the Ear. By Dr. VON TRÖLTSCH, Aural Surgeon, Professor of Medicine in the University of Wurzburg. Third edition, revised and enlarged.

To the second edition of Dr. Von Tröltsch's very excellent work on diseases of the ear, which appeared in 1862, the American medical public have been introduced by the translation of Dr. Roosa, of New York, a notice of which appeared in a preceding number of this journal. As admirable a manual of the pathology and therapeutics of the diseases to which the different portions of the auditory apparatus are liable, as was confessedly the edition just referred to, up to the period at which it appeared, the third edition, which is now before us, is in every respect superior to it. It has been very thoroughly revised in every chapter. The very great advances which have been made within the last fourteen or fifteen years in our acquaintance with the true seat, the causation, the symptoms, march, and nature of the morbid conditions incidental to the several portions of the organ of hearing, and with the treatment best adapted to conduct them to a favourable termination, have been carefully studied by the author, and, when of value, incorporated in the manual. Many additions have been made to the text, and one entire new chapter, the fifteenth, has been added.

The work of the author "On the Anatomy of the Ear in its Application to the Study of the Diseases of the Organ," or at least the substance of it, has been made use of in the preparation of the present edition of the manual, so as to precede the account of the morbid affections of each portion of the auditory apparatus by a description of the anatomical structure of the latter.

The author has succeeded in the preparation of a treatise on the pathology and therapeutics of the diseases of the ear—presenting a very complete and correct exposition of present views based upon recent observations and investigations, and well adapted for the use of the student and practitioner.

The text is illustrated by eighteen wood-cuts. D. F. C.

ART. XXXVI.—*Catalogue of Obstetrical and other Instruments exhibited at the Conversazione of the Obstetrical Society of London, held, by permission, at the Royal College of Physicians, March 28th, 1866.* With Numerous Illustrations. 8vo. pp. 229. London, 1867.

THE exhibition of instruments, the catalogue of which is before us, has been pronounced by a competent judge, "one of the most astonishing historical displays of the mechanical appliances of the obstetrical branch of the Art ever collected together in one room."

The aim and purpose of this exhibition was, by bringing together the instruments that have been used in different ages and in different countries for the purpose of overcoming those obstetric difficulties which have been met with in all ages and which now occur in all countries, to enable all who had access to it to read for themselves a most important chapter in the history of midwifery; to enter, as it were, into the thoughts of other men, their predecessors and contemporaries, by studying the visible expressions of minds labouring in the cause of our common science. Enabling them, also, to do something towards identifying and preserving the original forms of instruments as they were designed and used by their inventors.

The interest evinced in the exhibition and the desire generally expressed to possess a permanent record of the event, have induced the Council of the Society to publish the present catalogue, in the hope that future service may thus be done to the cause of obstetric medicine. The permanent utility of such a work will be greatly facilitated if, from time to time, inventors or modifiers of instruments, and instrument makers, of all countries, will, as the Editor of the volume before us suggests, send for insertion in future editions, "descriptions, and if possible, illustrations, of any novelty they may have introduced." D. F. C.

ART. XXXVII.—*On the Growth of the Recruit and Young Soldier, with a View to a Judicious Selection of "Growing Lads" for the Army, and a Regulated System of Training for Recruits.* By WILLIAM AITKIN, M. D., Edinburgh, Professor of Pathology in the Army Medical School, etc. etc. etc. 16mo. pp. 72. London, 1862.

THE basis of this Essay is a "Lecture Introductory to the Course of Instruction at the Army Medical School." It is designed to show that inasmuch as growth is not completed until about the twenty-fifth year of life, great care is necessary in training young soldiers in order to secure them to the service in an efficient condition during the period of enlistment. More than sixteen per cent. of the invalids of the English army are recruits of less than two years; and almost all the invalids are men of less than three years' service. This extent of loss is ascribed mainly to receiving recruits at too early an age, and to their training not being in accordance with physiological laws.

This little volume will be appreciated by medical officers of the army and navy. W. S. W. R.

ART. XXXVIII.—*The Science and Practice of Medicine.* By WILLIAM AITKEN, M. D., Edinburgh, Professor of Pathology in the Army Medical School, etc. etc. etc. From the Fourth London Edition, with additions by MEREDITH CLYMER, M. D., etc. etc. 2 vols. 8vo. pp. 955, 1114. Philadelphia: Lindsay & Blakiston, 1867.

THE two bulky volumes before us comprise a very complete and accurate digest of the present state of our knowledge in respect to the science and the

practice of medicine, well arranged with reference to the wants as well of the student as of the young practitioner.

The initial chapters, composing Part the First, indicate the all-important element of "general pathology," with a brief sketch of the principles on which the systems of nosology have been founded since the days of Cullen.

The remainder of the work is divided into three parts. The first discusses the subject of systematic medicine—nosology—or the classification of diseases. Dr. A. suggests the adoption of the classification of the Registrar-General of England. This, which was originally proposed by Dr. William Farr, has, we are informed, been carefully discussed and revised at the recent meeting of the Statistical Congress held at Vienna, while a nomenclature substantially the same has been proposed for adoption in all the States of Europe. It is stated, on the authority of Dr. Farr, that a classification nearly the same as the English one has been adopted in Bavaria, and is quietly making its way among practical men in Germany.

An accurate nomenclature and classification of diseases are highly desirable objects, but in the present state of our knowledge can scarcely be attained, so far at least as to render any system of nosological terminology fixed and determined. The true etiology and pathology of many important diseases are far from being settled, in points even in regard to which a positive conclusion would seem to be the most easily arrived at. With our present imperfect knowledge of special pathology the nosological arrangement pursued by Dr. A. in the treatise before us is as unexceptionable as any with which we are acquainted.

In the next division of the treatise, comprising the nature of diseases, special pathology and therapeutics, an account is given of the nature of each disease considered in reference to the class in which it stands. Each morbid process is defined not by a logical definition, but merely by enumerating prominently its leading characters, so that the student may at once distinguish the general features of the malady. Having thus established the position of each disease in reference to its nosological and pathological notations, the principles which govern its treatment are stated, and, in some instances, definite details are given.

This department of the treatise is very full, and presents a fair exposition of the opinions of the leading authorities of the past and the present, in respect to the nature, causes, phenomena, course, and treatment of the diseases of the human organism. The practical importance of the thermometry of disease is set forth, and diagrams illustrative of the typical ranges of temperature, particularly in febrile diseases, are given.

The concluding part of the treatise comprises the subject of Medical Geography, or the Geographical Distribution of Health and Disease. This is unquestionably a most important department of the science of medicine; without an acquaintanceship with which the true etiology of a long list of endemic and epidemic diseases cannot be satisfactorily made out. "It was," Dr. A. remarks, "emphatically written by Cabanis and Malte Brun, that climate and natural history lost much of their value from the fact that the physical conditions of the surface of the earth had not then been described in relation to these studies—a deficiency now in a great measure supplied by the labours of Humboldt, Berghaus, and Johnston. So, also, it may be stated that the nature of diseases and their distribution on the globe require that they should be studied in relation to the physical condition of the earth's surface and to the variations of their types in the different regions of the earth. The geographical distribution of health and disease in relation to physical geography, is a branch of the science of medicine rapidly and justly growing into one of importance, and in one department—that of sanitary science—is beginning to yield most important fruits."

This portion of the work is of interest, and replete with instruction. Several of the questions involved in the subject have, of late, been investigated with care, and facts developed calculated to materially modify the views heretofore held in regard to the influence of climate in relation to some of the most prominent diseases.

The additions that have been made by the American editor are copious and important, and the occasional notes inserted by him appropriate and useful, and increase materially the completeness of the work. D. F. C.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES

ANATOMY AND PHYSIOLOGY.

1. *Anatomy of the Capsule of Tenon and its Relations to the Muscles, Sclerotica, Conjunctiva, Caruncle, etc.*—In our preceding number we gave an account of a modification of the operation for strabismus, devised by Dr. LIEBEREICH, from his minute investigations regarding the capsule of Tenon and its relations. The result of these investigations we shall now lay before our readers.

"The capsule of Tenon," he observes, "which incloses the whole eyeball, with the exception of the cornea, consists of two very different portions. The posterior half, with its smooth, firm inner surface, forms a cup in which the eyeball moves freely, as the head of a joint in the socket. This cup is pierced by the four recti muscles, and forms, at the point of perforation, a sharply defined ring, which enters into so close a connection with the muscles, as to render any displacement between the two impossible. This close adhesion between the muscles and the posterior half of the capsule is, moreover, increased by sheath-like processes, which run backward from the outer surface of the capsule towards the orbit, and which are, for a certain distance, firmly connected with the muscles. But, towards the eyeball, no sheath-like processes extend from the posterior capsule; the latter terminates abruptly in the form of a ring, which incloses the spot where the muscles penetrate, and whence, for a very short distance, the muscles are quite free from any adhesion. But before the tendon is inserted into the sclerotic, it penetrates between the sclerotic and the anterior half of the capsule, and becomes united with the latter.

"This anterior half of the capsule, which may be considered as standing towards the posterior portion in the relation of a semicircular lid to a semicircular cup, is much thinner than it, and is difficult to dissect, more especially on the dead body; for, like the conjunctiva, it rapidly diminishes in thickness and firmness after death.

"If we trace the anterior half of the capsule from the anterior pole of the eye towards the periphery, we commence with a circular opening which corresponds to the size of the cornea, and through which the latter projects. The margin of this opening is in close apposition to the sclerotic. Within a zone, which is bounded on one side by the opening or the margin of the cornea, and on the other by the line uniting the insertion of the four recti muscles, the conjunctiva, the capsule of Tenon, and the sclerotic, are firmly and immovably connected together. At the periphery of the zone, this condition becomes, however, changed. The connection between the capsule and the sclerotic is interrupted by the passage of the muscles. The lax cellular tissue, which here connects the sclerotic with the capsule and the inner surface of the muscle, may perhaps have given rise to such complex and fanciful descriptions as those of Guérin. (*Gazette Médicale*, 1842, No. 6.) The idea that the muscles, after they have

pierced the capsule, are accompanied as far as their insertion by sheath-like processes derived from it, has, owing to these descriptions, maintained itself in ophthalmology even up to this time, and has served as a basis for explanations of the effect of the tenotomy, the difference between the old and modern mode of operating, etc. This idea is, however, erroneous; for these sheath-like processes do not exist at all. But, as has been already mentioned, the anterior half of the capsule of Tenon certainly adheres to the external surface of the muscle and is intimately connected with it. On the other hand, the conjunctiva is here also tolerably firmly connected with the capsule, as far as a somewhat irregularly circular line, which may be recognized by the fact that it lies at the bottom of a furrow when the eye is moved in an eccentric direction. The formation of this furrow prevents the sinking and tilting forwards of the conjunctiva, which would otherwise occur near the caruncle, as, for instance, when the eye looks far inwards.

"From this marginal line, the connection between the capsule of Tenon and the conjunctiva becomes quite lax. One portion of the connective tissue, which composes the anterior half of the capsule, is reflected, and passes over into the submucous tissue of the eyelids; another portion attaches itself to the edge of the posterior half of the capsule, in order thus to close the latter. These two halves do not really pass perfectly over into one another, inasmuch as the edge of the posterior half of the capsule is partly continued into the band-like adhesions between it and the edge of the orbit."

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2. *New Lingual Muscle.*—BOCHDALEK, Jr., describes a new small muscle of the tongue, extending longitudinally in the middle line between the two genio-hyo-glossi.—*Reinhert und Du Bois Raymond's Archiv*, 1866, from *Journal Anatomy and Physiology*, No. II.

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3. *Professor Parkes's Recent Experiments "On the Elimination of Nitrogen by the Kidneys and Intestines during Rest and Exercise on a Diet without Nitrogen."*—These experiments were conducted at the Netley Hospital, and were originally undertaken "to test the results arrived at by Prof. Fick and Wislicenus with respect to the elimination of nitrogen during exercise on a non-nitrogenous diet, as recorded in the *Philosophical Magazine* for June, 1866 (supplement)." Their conclusions were in brief as follows:—

The question at issue was, whether muscular power is the result of the oxidation of actual muscular substance, or of the elements of the food after absorption, but before conversion into organized tissue; and the object of the experiment was to determine the ratio existing between the waste of the tissues produced by a given amount of mechanical work, and the calculated amount of force to be obtained from the oxidation of so much matter. For it is evident, that should these two quantities prove to be not related to one another, the waste of the tissues must not be taken as the equivalent of the amount of work done.

To determine this point, the Professors, having abstained for a given period from meat, bread, cheese, milk, and, in short, from all food containing nitrogenous principles, carefully estimated the amount of nitrogen excreted during their ascent of a mountain, which happened to present unusual facilities for the purpose; and they found that, after making ample allowance for errors of observation, "scarcely one-fifth of the actual energy required for the work performed could have been obtained from the amount of muscle consumed," the remaining four-fifths having been supplied by the elements of the non-nitrogenous diet taken during the period.

These conclusions, although supported in the main by the results obtained by other observers, have been objected to on the ground of the very short period over which the observations extended, and on account of the intestinal excreta not having been considered. It was with the view of testing the value of these objections that Dr. Parkes undertook the present series of investigations.

The experiments were made upon two perfectly healthy soldiers, of steady and regular habits; one of them, S., was a young, strong, active adult; the other, T., the senior by several years, was a small spare man, but well propor-

tioned and active. Every care seems to have been taken to insure the most accurate results. The whole period of eighteen days, over which the observations extended, was divided into five periods, as follows:—

First, a period of six days, during which the men ate a regulated diet, consisting of—

	S.		T.
Cooked meat	7.625	oz. avd.	7.625
Bread	16.66	"	16.26
Vegetables (¾ potatoes, ¼ cabbage)	13,87	"	13.
Butter	1.	"	1.
Tea (milk 3 oz., sugar 1½ oz.)	20.	"	20.
Coffee do.	20.	"	20.
Beer	15.	"	15.
Water	5.8	"	2.33
Salt	5.	"	.33

and performed their ordinary work. During this period all the variations in their weight, and in the amount and character of their egesta were carefully noted, in order to form a standard of comparison.

Secondly, a period of two days of abstinence from meat, bread, milk, and all nitrogenous food, but with the most complete rest from muscular activity.

Thirdly, a period of four days, during which they returned to their former diet and occupation, in order that they might regain their normal standard.

Fourthly, a period of two days of abstinence from nitrogenous food, but during which they took a very considerable amount of exercise.

Fifthly, a period of four days of their regulated diet and occupation, in order that the effect of the last period might be fully noted.

During the first period it was found that nutrition proceeded with the most perfect regularity, and the excreta (both urinary and intestinal) proved to be perfectly normal. The amount of food was almost the same in each case, as may be seen from the table, with the exception that the bigger man took nearly twice as much water as the other; the smaller man, therefore, took more solid food in proportion to his body-weight than the bigger man did. The proportion existing between the amount of nitrogen excreted and the weight of the body was identical in the two cases, showing, as Dr. Parkes says, "that a real connection must exist between body-weight and urinary excretion." As might have been expected, the smaller man, T., passed more nitrogen in his intestinal excreta than the other did, since he ate the same amount of food and lost less in his urine.

Second Period.—The men were now placed upon a diet consisting of
Arrowroot (cakes and jelly);
Butter (containing no casein);
Sugar; and
Tea without milk.

The quantity was left to choice and appetite. Both took more water than formerly. They were confined to their room, and remained sitting still or lying in bed the whole time. Both lost weight—S. rather more than 2½ lbs., and T. about 1¾ lb.

The results of the urinary analysis, when summed up, amount to this—that, on the mean of the two days, the urea excreted during the first twenty-four hours was only about one-half of what it had been before, whilst during the last twelve hours it was in each case only one-third of the normal quantity. The total amount of nitrogen excreted varied in much the same proportion. On comparing the relation borne by the excreted nitrogen to the body-weight, it was found that the tissues of the older and smaller man furnished a slightly greater amount than those of the younger man; and this statement holds good both as regards the nitrogen contained in the urea and the other excreta.

Third Period.—The men at the close of this period had regained what they had lost during the previous two days in body-weight, and had, in other respects, returned to their normal standard.

With regard to the excreta, it was found that a certain proportion of the nitrogen of the food was retained in the body to make up for the previous defi-

ciency, and to enable the tissues to recover that reserve fund of nutriment which had been so largely drawn upon. In the case of S. the amount of nitrogen retained represented one-fourth, and in the case of T. nearly one-third, of the whole quantity taken.

Fourth Period.—The men were again reduced for two days to the same non-nitrogenous diet as before during the second period. They ate more this time; their hunger was satisfied, but they complained of the monotony of the diet. They now took active exercise, walking on level ground at intervals during the day, after which they went to bed. On the first day they walked 23.76 miles, which, when calculated as work done, may be represented on Dr. Haughton's plan as follows:—

S. lifted 453.6 tons one foot
T. " 346.74 tons "

On the second day they walked 32.78 miles: *i. e.*,

S. lifted 625.8 tons one foot
T. " 475. " "

"The first day's walking was done pretty well by both men. On the second day both did the first twenty miles well, but felt very much fatigued during the last thirteen miles. During the last four miles each man felt a pain in the small of his back. Both, however, could have marched on the following day if necessary." S. stated that though he had previously marched long distances with a heavy kit, he had never before felt so exhausted. Both men felt hungry; the food, however, satisfied their craving sensations. There was no perceptible action of the skin. The weather was fine and warm.

During these two days S. lost nearly 4½ lbs. in weight, whilst T. lost rather more than 1¾ lbs.

The changes in the excretion of urea were as follows: During the first twenty-four hours a decrease of 15.5 grs. was noted in each case; in the next twelve hours a further decrease of 7.7 grs. took place; whilst, during the last twelve hours, chiefly during rest at night, there was an increase of 30.86 grs. in S., and of 15.5 grs. in T.

The total excretion of urea during these two days of exercise, as compared with a similar period of rest, was an increase of about 7.7 grs. in S., and a decrease of about 11.5 grs. in T.

The total excretion of nitrogen stands thus: S. excreted more throughout the entire period, the excess over that excreted during the same period of rest being about 23 grs.; whilst T. for the first thirty-six hours excreted less than before, but made up for it during the last twelve hours, the excess being ultimately a little over 3 grs.

With regard to the other constituents of the urine, it was found that no increase took place in the amount of phosphoric acid excreted during the period of exercise, as compared with that of rest, and only a very slight increase in the sulphuric acid; whilst it appeared that, on a diet free from salt, much more chloride of sodium passed with the urine during a state of rest than of exercise.

On balancing the totals of the ingesta and egesta during this period, it was found that in both men a considerable increase took place in the egesta of the skin, lungs, and intestines.

Fifth Period.—The men now returned to their regulated diet and exercise. At first both were fatigued after the exertion of the previous day, and rested a good deal; and, as might have been expected, they were more hungry than they had been after the past period, and ate more largely. They almost entirely regained their lost weight in two days.

On estimating the excess of nitrogen excreted during this period, and taking into account at the same time the increased amount of nitrogen taken in the food, it appears that there is no ground for supposing that in the case of S. this excess was derived from the disintegration of muscle which had taken place during the last period. It is, however, probable that the very large excess of urea on the first day of this period, which occurred in the case of T., was really owing to an augmented elimination due to the work done. No such

excess was observed in the case of S., who had had, however, a larger elimination than T. during the previous twelve hours.

A marked increase in the excretion of non-ureal nitrogen over the ureal nitrogen was noticed as a direct result of the exercise taken during the previous period. Dr. Parkes considers it probable that this nitrogen existed in the form of creatinine, and believes that the cause of the discrepancy between the results of Professors Fick and Wislicenus and his own on this point is to be found chiefly in the very short period of time over which their observations extended.

The chloride of sodium and the phosphoric acid speedily returned to their respective normal standards.

The following important conclusions may be drawn from these experiments, and those of Professors Fick and Wislicenus, with which they agree on the most important points:—

Firstly. That on a non-nitrogenous diet of fat, starch, and sugar, exercise produces a slight but unimportant increase in the amount of nitrogen excreted both by the kidneys and the intestines.

Secondly. That during the period of actual work the amount of urea is diminished, proving that changes take place which cause either a retention of the nitrogen or an elimination by another channel. It is evident, then, that the quantity of the urea excreted cannot be taken as an index of the amount of waste which the tissues have suffered.

Thirdly. That amount of force expended during exertion is not merely the result of the oxidation of the muscular, nervous, and other nitrogenous tissues of the body, which can, in fact, only represent about one-fifth of the entire quantity, but that a most important share in its production is taken by the non-nitrogenous (fatty and starchy) elements of the food, previous to their transformation into tissue.

Fourthly. That a well-fed body possesses a sufficient store of nitrogen to allow of muscular exertion being continued for some time without requiring any immediate supply, but that food will shortly be required to replace the tissues which have been destroyed, and that this food must contain some of the nitrogenous principles, either animal or vegetable—viz., albumen, fibrin, casein, gluten, &c. This last fact was very distinctly proved during the third and fifth periods of Dr. Parkes's experiment, in which not only was the exhaustion consequent upon the starvation of the nitrogenous tissues severely felt, but a very notable quantity of nitrogen was taken and retained in the body to replace the former loss.

These results, besides their purely scientific value, may teach certain useful practical lessons. Thus, in training for those exercises which require a great and sudden expenditure of force, it is a mistake to supply a too exclusively nitrogenous or meat diet, since four-fifths of the total amount of force has to be obtained from the oxidation of the non-nitrogenous elements of the food—fat, starch, sugar; whilst, on the other hand, the want of a sufficient supply of the nitrogenous elements—albumen, fibrin, and casein, etc.—leads to an inadequate renewal of the wasted muscular and nervous tissues, and the consequent formation of an imperfectly organized structure, which will be less able to bear any of the severer trials to which it may be subjected, and will ultimately lead to early degeneration and death.—*Med. Times and Gaz.*, April 13, 1867.

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4. *Cutaneous Absorption.*—M. Hoffman related at a recent meeting of the Academy of Sciences some experiments which he had performed on himself in illustration of the question of cutaneous absorption:—

"1. During 44 days I took 16 baths, each consisting of 300 litres of water and 250 grammes of digitalis leaves. After the third bath only, I began to feel the peculiar uneasiness proper to the action of the medicine, my pulse at the same time becoming slower by four or five beats, this condition persisting for several hours. By the eighth bath the *malaise* had increased, and my pulse had descended from its ordinary number of 68 to 61, while after the sixteenth bath it had descended to 48. It is evident, then, that the active principles of digitalis had been absorbed, but only in a slow and progressive manner. 2. Every third

day during six weeks I took a bath to which 50 grammes of iodide of potassium had been added. After the fifth bath I recognized the presence of the iodide in the urine, this condition persisting for twelve days after all treatment had ceased, excretion being, in this case, as slow as the absorption. 3. A bath was taken every third day during a month, to which 5 kilogrammes of marine salt had been added, and the chlorides of the urine rose progressively from 2.15 grs. to 3.47 grs. per litre. The general conclusions arrived at from these and other experiments are: (1) Chemical and other agents, dissolved in water, penetrate very slowly, but still manifestly, into the economy by the channel of the external integuments; and it is only when the blood and other liquids have become saturated with them that they are excreted by the economy. (2) All medical agents are not absorbed in the same degree. (3) The contradictory results hitherto obtained are solely due to the fact that the experiments upon which they have been founded have not been pursued for a sufficiently prolonged period."—*Med. Times and Gazette*, April 20, 1867.

5. *Innervation of the Heart.*—A valuable series of researches has been conducted by MM. E. and M. CYON, of St. Petersburg, with a view to clear up our knowledge of the above subject. The experiments were conducted late last year in M. Du Bois Reymond's laboratory at Berlin, and the results are published in the *Comptes Rendus* for March 25th. Some of the authors' conclusions are of interest. Amongst others are the following: 1. Electric irritation of the third branch of the inferior cervical ganglion produces in rabbits an acceleration of the beats of the heart and a diminution of their force. 2. The first two branches of the same ganglion are the sensitive nerves of the heart. 3. Irritation of the fourth branch of this ganglion, which passes above the subclavian artery, produces a slight increase of the mean pressure of the blood, without altering the number of pulsations. 4. In dogs it is the second branch of the inferior cervical ganglion whose irritation produces the same changes as the irritation of the third in rabbits. MM. Cyon propose to call these nerves the *accelerator nerves of the heart.* They formulate the following conclusions as to their action: 1st. They are not ordinary nerves terminating in the muscles of the heart. 2d. They are not nerves acting on the vessels of the heart, because the complete occlusion of these does not change the number of pulsations. 3d. They are nerves terminating in the ganglia of the heart. 4th. They are antagonists of the pneumogastric. Irritation of the latter diminishes the pulsations of the heart while increasing their force, while these accelerating nerves increase the number of pulsations while decreasing their force.—*Lancet*, April 13, 1867.

6. *On the Mode and Duration of the Contraction of the Heart in Health and Disease.*—Dr. BURDON-SANDERSON, in a lecture recently delivered before the Royal College of Physicians, pointed out the relation between the form of the arterial pulse as revealed by the sphygmograph and the movements of the heart in health and disease.

In every arterial pulsation four events may be distinguished.

I. *The sudden or primary expansion of the artery.*—It was shown that the primary expansion does not express an increase in the quantity of blood contained in the artery, but is due to a sudden jerking forwards of the particles of liquid, and is, therefore, of the nature of a commotion or shock in which each particle communicates its movements to its neighbour.

II. *The more gradual distension of the artery by impletion.*—The moment of greatest impletion occurs at a variable interval never exceeding a fifth of a second after the primary expansion. The time at which it occurs, and the degree in which it is marked, depend on the quantity of blood transmitted by the contracting heart to the artery.

III. *The sudden collapse of the arterial wall.*—This is a movement of the same nature and produced in the same way as the primary expansion—that is to say, by a sudden impulse of the particles of liquid contained in the arterial system in a direction towards the heart, the effect of which depends, not on its extent, but its velocity.

IV. The fourth event constitutes *the diastolic expansion or second beat*, the

distinctness of which in certain morbid states gives to the pulse the character known as dicrotism. The explanation given by the lecturer of this phenomenon may be shortly stated as follows: The injection of blood into an artery during the systole of the heart produces two effects therein, both of which are limited to the period of contraction—viz., (*a*) distension of the walls of the arteries, and (*b*) increase of the pressure of the blood against its internal surface. Of these two effects the former is directly proportionate to the *elastic yieldingness* of the artery, the latter inversely proportionate to this property—that is, the more elastic the artery the more is its area increased during the ventricular systole, and the less the augmentation of blood-pressure. According as the one or the other of these effects is in excess the pulse assumes different forms. If *a* predominates, the collapse of the artery at the close of the systole is complete, and is followed by no appreciable reaction. If *b*, the pulse is dicrotous. If the two are balanced, the pulse is normal. This implies that in the normal state of the circulation the force of the heart is only partly expended (as regards the arteries) in carrying on the circulation during the period of systole, the remainder of the force being thrown into reserve to be used in maintaining the flow of blood after the heart itself has ceased to act.

In accordance with this principle diseased pulses may be classified on either side of the normal as follows:—

1. Pulse of which the characters indicate that the arterial blood-tension produced during systole is less than natural, and consequently that the resistance is diminished and the duration of the systole shortened. These effects may be due either to diminution of the quantity of blood discharged by the heart at each stroke (mitral disease, spanæmia), or to an increased susceptibility of the heart to stimuli, whereby the ventricle contracts *too soon*, that is before it has received a sufficient supply of blood from the veins. This state of the heart characterizes what may be properly designated as the nervous pulse, or the pulse of emotion. Here, as before, the quantity discharged is unnaturally small.

2. Pulses of which the characters indicate that the blood-pressure produced in the arteries during the contraction of the heart is excessive; and that in consequence of increased arterial resistance the ventricular systole is prolonged.

Under this head three distinct forms of pulse are comprised—viz:—

1st. The hyperdynamic pulse. This form, which arises from increased resistance dependent on structural changes in the arteries or their capillary terminations, indicates that during the contraction of the heart the arterial system is *over-distended*. In such a pulse the curve which indicates the systolic distension is boldly projected, while the diastolic reaction is comparatively feeble.

2d. The senile pulse, or pulse of inelastic arteries, which differs from the preceding mainly in the complete absence of diastolic reaction.

3d. Adynamic pulse of continued fever. Here the systole is prolonged, not because the resistance is too great, but because the heart is too weak for its work. The arteries are comparatively empty, and, consequently, their elastic yieldingness is in excess. Hence the diastolic reaction is unnaturally great, and the pulse becomes sensibly double, the second beat being often quite as distinct as the first.

In conclusion, the lecturer remarked that the form of pulse to which he attributed the most practical significance was that to which he had ventured to assign the term "hyperdynamic;" for the structural changes in the arteries and arterial capillaries, of which it afforded unquestionably the earliest indication, were of the gravest importance, not only with respect to prognosis, but in their bearing on the estimation of the expectation of life.

The lecture was illustrated by sphygmographic tracings on glass, which were exhibited by means of the oxycalcium light.—*Lancet*, April 13, 1867.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

7. *Protoxide of Nitrogen as an Anæsthetic.*—M. HERMANN states that on two occasions, when he inhaled this gas in a pure state, he was completely asphyxiated. The effect nevertheless was not unpleasant, because the intoxicating effect of the gas overpowered the sensation of dyspnœa, although it is as undoubtedly present. This condition of asphyxia, in which the face is pale and the lips blue, differs very much from that produced by inhaling the same gas mixed with oxygen, in the proportion of 4 to 1. The experimentalist is intoxicated, but in a less degree, and the face retains its natural colour. M. Hermann remarks that surgeons, not now contented with ordinary anæsthetics, are trying this kind of inhalation; he thinks that, inhaled by itself, the protoxide of nitrogen is dangerous, as it is likely to produce a mortal asphyxia; and if administered mixed with oxygen, it is a very weak anæsthetic, of very short duration.—*Brit. Med. Journ.*, April 27, 1867.

8. *Chloroform and Ether in Mixture.*—A mixture of one part of chloroform and two of ether has been by some considered a perfectly safe anæsthetic mixture, it being thought that the stimulating properties of the ether would counteract the depressing effects of chloroform. Mr. ROBERT ELLIS, however, states (*Med. Times and Gaz.*, March 9, 1867) that too much reliance has been placed upon the formula of its constitution, and too little on its evaporation. He gives the following as the conclusions to which he has been led after a long series of experiments:—

"1. That the ingredients of fluid anæsthetic mixtures evaporate in a great degree, independently of each other, and in extremely differing quantities.

"2. That though alcohol exerts *in vacuo*, a powerful influence in restraining and equalizing their vaporization, this influence is in a great measure annulled in evaporation into free air, as in an inhaler.

"3. That the only method of obtaining a true anæsthetic mixture is by consideration of the respective volatility of its ingredients, and so adjusting their proportions as to provide that all should evaporate simultaneously.

"4. But as this can only be done by a very great reduction of the quantities employed, both of alcohol and chloroform, then the object of the mixture is entirely frustrated, and it is reduced in its properties to one similar to ether only—the most volatile of the ingredients always taking precedence of the rest.

"5. That if impure alcohol and ether are used, these defects of unequal volatilization become still more exaggerated, and the result vitiated by the water left behind after evaporation.

"The behaviour of the mixture 'C' which proved fatal in the case at Bristol was most carefully examined by me. I found that it was most unreliable, parting with its ether rapidly and with its chloroform slowly."

9. *Action of Digitalis.*—M. LEGROUX, of Paris, as the result of his investigations, has arrived at the following conclusions: (1) That in all doses digitalis (whose active principle is digitaline) exercises a special influence upon the circulation. (2) If in the poisonous dose digitalis acts directly on the heart, it seems that in the therapeutic dose it first produces contraction of the capillaries, and only secondarily affects the heart in re-establishing the equilibrium of the circulation. (3) According to this theory, digitalis is a sedative to the circulation, in the sense that it calms the disturbances of the latter, doing so not by an excitant or tonic action. (4) The influence of digitalis on temperature, secretion, nutrition, uterine contraction, &c., can only be explained by its excitant action on the ultimate branches of the sympathetic system. (5) This theory explains the favourable results obtained by the use of digitalis in fevers, cerebral affections, hemorrhages, dysmenorrhœa, congestions, dropsies, &c.—*Gaz. Méd. de Paris*, April 27, 1867.

10. *Chlorinated Mixture.*—Dr. W. D. DOBIE gives (*Edinburgh Med. Journ.*, March, 1867) the following formula for the preparation of this mixture, which he extols in the treatment of cholera.

"Take a clear dry wine or brandy bottle, place it for a few minutes upon a hot brick, or upon a stove, until it becomes thoroughly warm, then take eight grains of chlorate of potash in coarse powder, and add to it one fluidrachm, by measure, of chemically pure hydrochloric acid; agitate the chlorate in the acid until all effervescence ceases, and the chlorate is completely dissolved. Then add an ounce of water, shaking the bottle briskly. Continue thus to add sixteen ounces of water, ounce by ounce, shaking the bottle between each addition. If two fluidrachms of chloric ether be now added, the mixture is complete.

"To this mixture I should be much inclined to add a moderate dose of the liquor morphiæ hydrochloratis, following out a suggestion of Dr. Alderson, of which I shall say a few words presently.

"The chlorine mixture, as thus prepared, is about one-third saturated with chlorine; it can be readily taken by patients direct from the bottle, but it was generally administered with an equal bulk of water. Three drachms of the mixture are about equal in strength to a drachm of the liquor chlori of the British Pharmacopœia.

"The dose of the chlorinated mixture was half an ounce every hour, or every two hours, to an adult; if the first dose was vomited, another was given after a shorter interval."

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11. *Comparative Immunity of Rabbits to the Poisonous Action of Atropia.*—Dr. W. Ogle relates (*Med. Times and Gaz.*, May 4, 1867) some interesting experiments instituted by him in regard to this matter from which he draws the following conclusions:—

"1. That a rabbit of middle age can live for, at any rate, six days exclusively on belladonna without inconvenience.

"2. That a rabbit can tolerate enormous doses of atropia administered either by the stomach or by subcutaneous injection, and that this tolerance is not due to the non-absorption of the poison.

"3. That this tolerance increases with the age of the rabbit.

"4. That dilatation of the pupils is, however, produced just as readily, if not more so, in an old rabbit as it is in a young one."

MEDICAL PATHOLOGY, SPECIAL THERAPEUTICS, AND PRACTICAL MEDICINE.

12. *Researches on Animal Temperature.*—M. Peter has laid before the French Academy the results of his researches on animal temperature. (A.) With respect to the modifications of the general temperature in their relations to modifications of certain functions or changes in volume of certain organs. 1. There is no constant relation between the variations of temperature and those of the circulation. Thus the increase of frequency of the pulse in disease is not necessarily attended with increase of temperature (taken in the axilla); and when this is raised, while there is increased frequency of pulse, there is no constant relation between the increase of pulse and elevation of temperature. 2. There is no constant relation between variations of temperature and those of respiration. 3. There is no constant relation between variations of temperature and changes in the volume of the liver. 4. *But there is a constant relation between the variations of the volume of the spleen and of the temperature.* Thus, whenever during illness the temperature of the body is increased, there is augmentation in the size of the spleen, and the relation of these changes is always constant. For one or more degrees of elevation of temperature, for example, the spleen generally increases one or more centimetres in its vertical diameter. The corollary to be drawn is that the spleen is an organ of hæmatosis, and that it actively concurs in the production of animal heat.

(B.) With respect to the modification of local temperature and those of sensibility. There is a constant relation between the variations of these, when

the alterations of sensibility are derived from a material lesion of the nervous centres. 1. The increase of temperature of a region is, within certain limits, inversely proportionate to the degree of sensibility. When the sensibility is morbidly diminished the temperature rises. Thus, when a limb is anæsthized, its temperature is higher than is that of the corresponding limb; while, when there is hyperæsthesia of the limb, its temperature is lower. 2. The temperature may vary from half a degree even to 2° C.; but it frequently rises or falls only to the extent of half a degree, and for its perception a delicate thermometer is required. 3. It is probably from want of having observed the conditions of sensibility in limbs paralyzed from affections of the nervous centres that contradictory accounts of their temperature have been reported. When the sensibility remains intact, there is no change of temperature: when it is diminished, the temperature rises; and when it is increased, the temperature falls below that of the sound limb. Sometimes an increase of heat of a part having its sensibility paralyzed is subjectively perceived by the patient and complained of. 4. These observations prove that the sensibility to heat is distinct from general or tactile sensibility. 5. This modification of temperature is sometimes accompanied by a corresponding disturbance of function in the anæsthized parts. Thus, owing to the excitement of the sudoriparous glands, the sweat may cover the surface. 6. This increase or diminution of the temperature of a region exhibiting diminished or increased sensibility leads to the supposition of a modification in the innervation of the capillary vessels. There may be *asthenia* of the vaso-motor nerves, and consequently dilatation of the capillary vessels, whence a more considerable afflux of blood and correlative increase of temperature in anæsthesia. Or there may be *hypersthenia* of the vaso-motor nerves, with contraction of the capillaries and a diminished afflux of blood, and a diminished temperature in hyperæsthesia.—*Med. Times and Gaz.*, April 6, 1867.

13. *Alterations in the Muscles in Fevers, and particularly in Smallpox.*—M. G. HAYEM inquires if the lesions of muscles described by Zenker as occurring in typhoid fever are degenerations peculiar and proper to that fever, as the above observer thinks, or rather if they do not represent in the muscles alterations analogous to those, commonly met with in the liver, the spleen, the kidneys, &c., of subjects who have died, not of typhoid fever only, but of other general febrile maladies. His researches have been principally, but not solely, conducted on the bodies of patients who have died of smallpox. He has found the same alterations of the muscles in fatal cases of variola, typhoid fever, scarlatina, measles, erysipelas, tubercular meningitis, generalized acute tuberculosis, and puerperal fever. On the other hand, in a great number of diseases, as phlegmasiæ, tuberculous and cancerous cachexiæ, Bright's disease, &c., the examination of the muscles only gave negative results. In persons dying of cholera the author has always found perfect conservation of the muscular fibres, and this also although the disease has not terminated fatally until after a long typhoid stage; but when cholera has supervened on typhoid fever, variola, or measles, the alterations of muscular tissue which are found in these diseases may be observed. Of the alterations spoken of, the author recognizes three degrees. 1. In the first stage the muscles generally are somewhat swollen and hard, their colour brownish or deep red, their friability a little increased. These conditions are due to general hyperæmia. At irregular points, generally in the form of elongated bands, decoloration and fragility of muscular fasciculi are observed. These characters acquire their maximum of intensity and extent in the next stage. Under the microscope, capillary congestion is observed, and swelling of the muscular fibre, which appears wavy and irregular; striation remains. Soon, grayish granules appear, scattered here and there irregularly, but always between the febrillæ of the primitive fibres. These for the most part dissolve in acetic acid; but, as their number augments, the muscular fibres acquire a granular aspect, and a certain number of granulations resist the action of acetic acid: the muscular nuclei become also more numerous by division. At the points where the muscular fasciculi are paler and particularly fragile, the author has observed that form of alteration called "waxy" by Zenker.—2. In this stage the colour may be variable, depending upon sanguineous exu-

dation, or upon change in the muscle itself. The normal tint of the muscle becomes paler, but not equally so in all the fasciculi: some become reddish gray, others yellowish or whitish; at the same time, their smooth aspect and special brilliancy are modified. Their consistence is altered; the muscular mass is harder, but its fragility is increased, and the torn surface is markedly granular. Microscopical examination shows an exaggeration of the appearances observed in the former stage. The appearance of fatty granules and beads, and the breaking up of the altered fibres, indicate the commencement of disorganization; meanwhile the multiplication of nuclei continues both in the interior of and outside the altered fibres.—3. The third degree is that of disintegration or softening of particular portions or centres. The fascicular aspect is excessively modified or entirely lost; in fact, the consistence may be so altered that at certain points the muscular tissue is diffluent. The muscular fibres tear as if boiled, and in some cases the cut surfaces exhibit a kind of puriform detritus tinged with blood more or less altered. Microscopic examination shows, in these cases, advanced disintegration of the muscular fibres, which are always more or less broken up under the form of waxy, granulo-waxy, or simply granular *débris*. These muscular *débris* exhibit abundant nuclei. Fatty granules and free globules, finely amorphous granular matter, and elements of altered blood are also found.—*Brit. and For. Med.-Chir. Rev.*, April, 1867, from *Gaz. Méd. de Paris*, Nov. 3 and 10, 1866.

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14. *Nightmare in Children.*—Dr. Sydney Ringer, in a paper on this subject (*Med. Times and Gazette*, May 4, 1867), says that the subjects of this affection are very generally pale, often ill-nourished, and out of health, and that the immediate cause of this screaming appears to be some disturbance of the stomach and intestines. "This disturbance is very generally dependent on food ill-suited to young children; for this irregularity of the bowels, and the screaming which accompanies it, are especially frequent in those children who have been brought up by hand, and who, consequently, suffer on the one hand from diarrhœa, on the other from constipation.

"Children who suffer from the affection now under consideration are sometimes infested by thread worms, and also show signs of the altered condition of the mucous membrane of the stomach and intestines by itching, heat, and dryness of the inner part of the nose, with itching at the anus. This screaming is increased by anything that interferes with the general health of the child. Thus, it is observed to be worse when the teeth are making their way through the gums, although the irritation and pain which arise from teething appear to be incapable of themselves of exciting this screaming. It is also made worse by slight attacks of catarrh of the lungs, or eruptions on the body. By treatment this screaming can usually at once be arrested. Both general and local treatment are in most cases required, the former to improve the general health, the latter to remove the conditions immediately exciting the screaming.

"The diet should be attended to, and any irregularity in the hours at which food is given to the child, or any unsuitability in the nature of the food, must be remedied. Attention to these points will very generally arrest any diarrhœa which may be present, but constipation with hard shotty motions will generally prove more obstinate, for such motions are almost invariably passed by young children under six months old when brought up by hand, and this although they may be correctly fed and take nothing but good cow's milk sufficiently diluted with water. We have seen that these hard, round, lumpy motions are partly composed of coagulated undigested milk. This coagulation in mass can sometimes be stayed by the addition to the milk of alkalies, such as lime-water or bicarbonate of soda. The latter is preferable for this purpose, as lime-water confines the bowels, and thus bicarbonate of soda should be preferred.

"If the bowels are confined, an active purgative will, in the great majority of cases, suffice to stay the screaming, and will insure to the child calm and refreshing sleep. A powder of rhubarb and soda repeated every night, or every other night, till three powders have been given, is useful. If the child be pale, and the constipation recurs and is obstinate, the following prescription will be found very advantageous—namely: Steel wine, to which is added a few drops of

tincture of rhubarb, in quantities adapted to the age of the child and to the obstinacy of the constipation. Usually six drops of tincture of rhubarb in a teaspoonful of steel wine given three times a day will open freely and comfortably the bowels of a child from six to nine months old.

"In order to effect a permanent cure it is often necessary to give medicines to improve the general health of the child, as these children are frequently pale and badly nourished.

"Thus, in children suffering from the affection we have just described, to effect a permanent cure, if the general health be bad, treatment must be directed to the restoration of the body to sound health. In these cases iron, cod-liver oil, with cold sponging prove most useful. Of the various preparations of iron, the tincture of the sesquichloride, in my experience, is decidedly the best. It has appeared to me that bromide of potassium is able to stay this screaming, but as its administration has been accompanied by the use of purgatives, or a regulated diet, it is difficult to determine how far the bromide was useful. It is, however, I feel sure, worthy of a trial in obstinate cases. Cold baths must be given with care; for while they may, if properly administered, do much good, if administered without certain precautions they will do great harm to children. If too great a shock be given to the child, depression of the system will be produced, and this may last even several days after the bath is administered, when the child may be languid and depressed, and may suffer from much chilliness with loss of appetite. Thus the amount of shock produced by the bath must be regulated to the age and strength of the child. In cold sponging of the body the shock caused is proportioned to the coldness of the water and the length of time the bath is continued; while the younger the child, or the weaker its health, the less able is it to bear up against the effect of the shock to which it is exposed. Hence with young children, and especially with those whose system is depressed, the bath should be continued only for a short time, and if the weather be cold, the water must be slightly warmed. When the child is weak, the bath should be continued at first for a few seconds only, and its duration be gradually increased as the child becomes accustomed to its use.

"If the following simple plan be adopted, the child, even if very weak, can take the cold bath with advantage, and all chance of depression is removed. The child should be placed before a good fire with its feet in warm water, while the cold water is freely poured over every part of the body except the head and face. The healthy reaction, with the agreeable sensations which follow the use of the bath, may be much increased by placing the child for a short time in the warm bed from which it had just previously been removed. The bath should be given immediately the child leaves its bed, and the breakfast should be taken soon after the sponging is completed."

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15. *Chronic Gastric Ulcer.*—Prof. SKODA, in a clinical lecture, remarks: "The chronic gastric ulcer, which, on account of its characteristic form and peculiar course, is designated as *Ulcus rotundum* or *perforans*, was not known to the older physicians; at least, they had no thorough knowledge of it, but confounded it generally with other morbid processes. The chief seat of it is at the lesser curvature, and specially in the pyloric portion of the stomach, chiefly in the posterior wall, more rarely in the larger curvature, and at the cardia. In very rare cases it occurs externally to the stomach, *e. g.*, in the duodenum or lowest part of the œsophagus. The characteristic features of the ulcer are, its circular form and its tendency to spread destructively in depth, and to extend to all the strata of the gastric parietes. The process of destruction always commences in the mucous membrane, and is confined to it in a large number of cases. We find accordingly, not unfrequently, in bodies the traces of a previous chronic ulcer, and the healing takes place, as in all other ulcerations, by means of new formation of connective tissue at the base of the ulcer, by which its edges are drawn towards each other and finally unite. In proportion to the amount of loss of substance will be the greatness of the constriction and shortening or deformity of the stomach, and the consequences may be, both a narrowing of the pyloric half, and also a considerable interference with the movements of the organ. But if the ulcer progresses, it then frequently leads to perforation, and

by the escape of the contents of the stomach gives rise to general and usually fatal peritonitis. In respect of extent and size of the ulcers, numerous gradations occur, and the form of the stomach is still more irregular when several ulcers become confluent. The causes of chronic gastric ulcer are not sufficiently known, probably several factors concur in their production. We may assume as probable, that a partial disturbance of nutrition, due to disease of the blood-vessels, occasions a circumscribed gangrenous destruction of the mucous membrane. The hypothesis, that an altered condition of the gastric juice gives origin to the ulcer, appears to be unfounded; nevertheless, it cannot be denied that the movements of the stomach and the action of the gastric juice hinder the cicatrization and healing. Without doubt, similar ulcers occur on other mucous membranes, but, on the one hand, they are not followed by the same severe consequences to the organism as in the ulcer of the stomach; and, on the other hand, they heal much more easily. Under unfavourable circumstances, as has been mentioned, the ulcer ends in perforation of the stomach and fatal peritonitis; but this occurrence will not rarely be prevented by the circumstance that the base of the ulcer has adhered to the neighbouring parts. Such adhesions are found corresponding to the seat of the ulcer, more frequently between the stomach and pancreas or duodenum; and also with the left lobes of the liver, the anterior walls of the abdomen and the omentum, the spleen, the diaphragm, the colon, etc. If the loss of substance be small, and the adhesions to the neighbouring organs firm, life may be prolonged for a considerable time. But if the loss of substance be great, the function of the stomach will, in spite of the cicatrization, be much disordered, and the nutrition of the organism may in consequence suffer considerably. Besides, even with firm adhesions subsequent perforation may take place from softening of the false membrane.

"The symptoms which accompany the ulcer of the stomach during life are very various. Sometimes for a long interval the symptoms are very insignificant or may be entirely absent; but for the most part, disorders of the functions of the stomach manifest themselves. Generally we observe a very painful sensation in the epigastrium of weight or drawing together; by pressure on the region of the stomach, a fixed, painful spot is detected. But these phenomena are also observable in chronic gastric catarrh, and the diseases are often undistinguishable. The appetite is usually more or less disturbed, occasionally unchanged, now and then increased. Yet the patients complain of slow digestion after meals, of pains, pyrosis, eructation, etc. As the disorder increases, retching and vomiting appear. The pain is generally fixed, but not always confined to the same spot. All the symptoms, it is evident, are not pathognomonic, and the physician is therefore, at an early period of the disease, not in a position to make a positive diagnosis. The hæmatemesis is of greater importance, and it is also one of the most dangerous symptoms, from its decided tendency to relapse. Vomiting of blood occurs with very varied intensity. The vomited matters are either only slightly tinged with blood, or are coloured chocolate brown, or like coffee grounds, the dark colour arising from the action of the gastric juice upon the blood effused into and detained for a long time in the stomach. Should a larger bloodvessel be eroded, the bleeding may be so abundant that death may immediately ensue, and, at all events, the highest degree of anæmia and exhaustion results. A feeling of weight and fulness of the epigastrium often precedes vomiting of blood. The hæmatemesis may take place at any period of the disease. The consequences of profuse hæmatemesis are the same which follow any other hemorrhages: syncope, pallor, coldness of the extremities, feeble pulse, etc. Sometimes the hemorrhage takes place without the vomiting, if a patient becomes pale after a sudden feeling of weight and heat in the epigastrium; and, on examination, the region of the stomach yields a hollow (?) percussion sound; if the pulse becomes feeble, and syncope comes on, from these symptoms we may conclude that a hemorrhage has taken place. Such an internal bleeding may occasion death without vomiting. The bleeding generally occurs during digestion; bodily exertion, mental emotions may induce it, but especially any excitement of the circulation. Emetics also, for which the patient sometimes craves, may likewise occasion it.

"In chronic gastric ulcers several stages may be distinguished. In the first

the formation of the ulcer takes place, and requires considerable time for its completion. In this period the symptoms are the same with those of chronic catarrh of the stomach, with which, indeed, the formation of the ulcer is frequently accompanied. The pains present nothing characteristic; they may be continuous and fixed or paroxysmal, and may be mistaken for a nervous gastralgia. The occurrence of pains in the spine opposite the epigastrium is also not characteristic, being found in other stomach affections. Hence, in the earliest stage, ulcer of the stomach is very difficult to diagnose. Palpation reveals at most a fixed spot where pain is increased by pressure, and only in the case of persistent adhesions can we sometimes discover a certain induration. In the following stage vomiting of blood comes on, from which we are better able to decide on the nature of the disease, although this symptom also does not belong exclusively to ulcer of the stomach, but may appear in the course of carcinoma of the organ. Even during this stage, in spite of repeated hemorrhage, the lesion may heal; still hæmatemesis must ever be regarded as a very grave symptom, because the bleeding itself may prove dangerous, and besides the bleeding always indicates a deeper ulceration in progress. Usually all the blood is not vomited, but a part of it passes off in an altered form with the stools, and sometimes the whole of the effused blood is so discharged when no vomiting occurs. In the third stage, perforation of the mucous membrane of the stomach at length ensues. When in consequence the contents of the stomach escape into the cavity of the peritoneum, a fatal peritonitis usually follows. This can only be averted in the case of slowly formed perforation by adhesions to the neighbouring part, and sometimes these adhesions give way at a later period. If these adhesions are extensive, and give rise to a hardness perceptible to the touch, they may be confounded with carcinoma. Occasionally perforation takes place suddenly, unpreceded by any other considerable symptoms of disease, as, for instance, when the progress of the ulcer is quite latent. Extensive adhesions may occasion long-continued disorders of the stomach and induce ill health; but a small adhesion may remain after cure without harm.

"The prognosis of a chronic ulceration is always doubtful, although many cases of cure are known; and although a cure can take place at any stage, still it must always be considered a dangerous disease. Death results either from hemorrhage or peritonitis, or when the course is very chronic from exhaustion. It is supposed that nearly a third of the known cases prove fatal.

"In regard to treatment, the most important rule is, that the patient subject himself to a strict dietetic regimen, and observe the strictest quietude, in order to favour the cicatrization of the ulcer. Besides these, we must endeavour to combat particular distressing symptoms. Milk diet is recommended as the most suitable, such as new cow's or asses' milk; others recommend buttermilk. Generally light fluid nourishment agrees best. For gastralgic symptoms, morphia and similar preparations are employed; for the frequently persistent constipation, clysters; for obstinate vomiting, ice, or small quantities of soda-water; for vomiting of blood, ice, alum, tannin, etc., or ferrum muriat., from ten to twenty drops a dose. The chief difficulty of treatment consists in this, that the chief indications, absolute rest, and abstinence from everything injurious, cannot be fulfilled. We are compelled, therefore, to confine our efforts to reducing the action of the stomach to the minimum, and administering the most easily digested food; a course of treatment which must be persevered in for a long period. For perforation, of course, little can be done, and treatment of symptoms is alone available."—*Edinburgh Med. Journ.*, March, 1867, from *Prag. Viert. Jahrschrift für die Pract. Heilk.* Bd. iv. 1866.

16. *Formation of Tubercle.*—In a paper, on this subject, by Dr. RICHARD DAWSON, read before the Royal Medical and Chirurgical Society (April 9th, 1867), the author drew attention to the great diversity of opinions as to the real nature of tubercle. quoting Virchow, Lecture XX., illustrative of the general ambiguity of definition. In that lecture tubercle is said to be a degenerative cell proliferation, thereby meaning that new corpuscles arise out of the previous organic morphological elements by a continued succession of divisions—a definition at best but vague even if accurate. The author produced specimens of

tubercle disease in thin sections and photographs from the same, as supports of his arguments, putting in as few drawings as possible, since sun pictures were more reliable than microscopic drawings. He defined a cell to mean an individual having an outer case within which would be found other cell or cells with surrounding material; and he called a tubercle an abnormal collection of animal matter. The ultimate divisions of air-passages he called air-sacs. The author next proceeded to describe certain sections from the healthy lung, showing that organ to be composed of an elastic transparent tissue, covered with oval, transparent, nucleated cells, which by some were called the epithelium lining the air-sacs. He drew attention to the general characteristics of these cells—viz., their transparency, small oval form, and limited number of nuclei. He then passed to diseased structures, showing sections from miliary tubercle of the lung; and observing these same cells, they were seen in places to be no longer transparent, oval, small, and few nucleated, but to have become dark, enlarged, warty, and irregular in form, with many nuclei. This most remarkable change he further illustrated by specimens from the same bodies, as well as some pictures of them. Some of these showed the meningeal arteries and vessels pulled from the cerebral hemispheres; and it was seen most clearly in these that, at intervals along the course of the capillary vessels, bulbous enlargements occurred, and that these swellings were in the outer coat of the artery, for the calibre of the vessel was undiminished. The nature of this bulb-formation he showed to be disease arising in the cells composing the outer coat; and this disease he called "nuclear hypertrophy," from its nature; for it was seen that the long undulating fibre-cells composing the outer coat lost their length, while their nuclei became enlarged and greatly hypertrophied. Many cells taking on this change, the bulb was formed, gradually enlarging, and capable of eventually obliterating the vessels, though not doing so of necessity. The change occurring in the diseased lung-cells was of a very similar nature: their nuclei hypertrophied, and many cells taking on this change at once, a mass was formed of enlarged cells pressing on each other, and eventually shutting up the air-sac altogether, giving rise to a tubercle. There was, therefore, no foreign deposit, but an abnormal action set up in the nuclei of normal cells. Dr. Dawson concluded his paper by defining the mechanism of tubercle-formation to be that, from unseen causes, certain cells in a tissue took upon themselves diseased action of the nature of nuclear hypertrophy; that this action continuing in many cells at once, as in the lung-sac, the passage became choked, its function destroyed, and hence arose a tubercle. Tubercular disease was one not only manifesting itself in deposits visible to the naked eye, but which affected the microscopic elements of cell-tissues partially as regards the cells composing the organ, generally as relating to the human body diseased.—*Med. Times and Gazette*, April 20th, 1867.

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17. *Inoculation of Tubercle.*—Mr. John Simon, President of the Pathological Society, related to the Society (March 19, 1865) certain experiments he had made, illustrated by specimens, in regard to this subject. He stated that his attention had been called to the subject by certain experiments of M. Villemin which he had wished to authenticate. Various litters of rabbits, amounting in all to fifteen, had been procured; part (ten) had been inoculated, part (five) not. Five of the former when killed presented a fair amount of disease, but in the lung only, certainly not as much as described by Villemin. One doe inoculated had after the inoculation invariably brought forth dead litters. From the rabbits affected three others were inoculated; one soon died, but the others, when killed some months after, presented unmistakable appearances of tubercle in the lungs. One had, besides, some tubercle in the mesentery and spleen; the other had most in the mesentery. Various animals, he stated, were differently susceptible, and Vogel's experiments had thus ended in a negative result. Villemin's experiments had been repeated by two French observers, who stated that gray tubercle was best adapted for inoculation, but Mr. Simon had made use of yellow tubercle with the results laid before the Society.

Dr. Andrew Clark stated that he had been attempting to inoculate tubercle for the last five years; and he would ask the President what *he* meant by inocu-

lation. Was the operation performed as in vaccination—by a mere scratch—or was a large wound made? (Here Mr. Simon explained that a small puncture was made, and the tuberculous matter introduced into it by a curette.) As to the substance employed, gray tubercle was a known product; yellow might be many things. In his experiments the substance produced in the rabbit was not the same as the tubercle found in man, the former having a cellular structure, the latter being entirely corpuscular. Another point was that the rabbits so affected might be kept for any length of time, as the so-called tubercle did not appear to undergo any of the secondary changes which ultimately cause death in the human lung. In the third place, the yellow tubercle found in rabbits might be produced by any diseased matter, although French experimenters say that they failed to inoculate with yellow tubercle. Further, many things might be taken for gray granulations by the naked eye, especially emboli. Altogether, the subject was surrounded with so much doubt that it would be wise to reserve opinions on it. The inoculability of tubercle was further contradicted, to a certain extent, by the comparative rarity of its transmission from husband to wife, and *vice versâ*.—*Med. Times and Gaz.*, March 30, 1867.

18. *Effects of Flannel and Scratching on the Skin.*—Dr. TILBURY FOX justly observes (*Lancet*, April 13, 1867) "that some skins are so irritable in health as to be excited to an unbearable degree by the use of flannel, and whenever there is a tendency to exaltation of the sensibility of the skin, this may not only be heightened by the flannel, but the flannel may also give rise to decided physical alteration. In a very large number of cases of skin diseases pruritus is intensified and the disease even protracted in this way, and in proportion to the degree of uncleanliness. Flannel acts mechanically by augmenting, or rather conserving, the local heat, and intensifying reflex action. *Practical rule:* When you have a congestive state of skin, or any disposition to neurosis, take off the flannel, and place it, if necessary, outside the linen;—this will prevent any 'catching cold.' The diseases in which this is advisable are, chiefly—erythemata, roseola, urticaria, certainly syphilodermata in their early stages, scabies, and prurigo. A remembrance of this little practical point will sometimes give us the greatest cause to be thankful that we attended to it, trifling though it be.

"*Scratching* plays an important part in the modification of skin diseases, most of which are accompanied by itching; to relieve which, scratching is the natural topical application. What does it do?

"1. When there is no eruption, it may produce one. For example, in pruritus, it gives rise to excoriations, an artificial eczema, general enlargement and turgescence of the follicles of the skin, with, perhaps, abrasion of the cuticle over and above them; wheals in a nettle-rash subject; ecthymatous pustules in the ill-conditioned. Of course in all these cases there is a basis to go upon—a tendency to the several diseases produced. Scratch a healthy person, and the local injury is soon remedied.

"2. It augments and modifies existing eruptions. See in eczema how it inflames it, and increases the discharge and subsequent crusting; in lichen, the thickening of the derma. In scabies it gives rise to the peculiar 'scratched lines' so characteristic of the disease, and many of the ecthymatous pustules; in prurigo, the peculiar ecchymosed apices of the papules, and helps out the coarse urtication.

"3. When the disease is *non-contagious*, secretion, if present, may be transferred, and when acrid sets up local inflammation; and when *contagious*, scratching is the surest method of inoculation, as in the case of the contagious impetigo or porrigo. Children in this way transplant the disease from the head to various other parts of the body. Mothers, beyond a doubt, get it about their hands from children. As an instance of the effect of scratching, I may mention the case of a gentleman I have recently seen in consultation who has tried every remedy and doctor on the continent, taken the baths at Aix, and been treated by a large number of medical men in London for prurigo. He has taken drugs in any amount, and about sixty prescriptions were handed to me for my inspection. In this case, which was of three years' duration, the itching was cruel, the whole skin reddened, thickened, dense, hot, and exceed-

ingly appreciable of change; whilst almost every conceivable application had been used. My impression as to the influence of scratching turned out to be correct; and, by dint of perseverance, the patient avoided this source of irritation, and is now practically well. In this case, in which the least scratching was followed by general reflex irritation, the teachings of sound reasoning in league with clinical reminiscences put to shame that empiricism which is the curse of cutaneous medicine."

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19. *Milk Diet in the Treatment of Diseases of the Heart.*—Dr. Pécholier, of Montpellier, attributes great importance to the milk diet, not only in dropsy, like some of his predecessors, but also in other diseases, and especially those of the heart. He states that in active hypertrophy—namely, in those cases where the consequences of the development of the muscular fibres prevail over the embarrassment of the circulation caused by the dilatation of the cavities, the contraction of the orifices, or the insufficiency of the valves, and where, in consequence, the tension of the blood is great in the arteries, and the radial pulse is full and hard; in such cases, at their commencement, the milk diet, together with the use of digitalis, and sometimes without it, will, if continued long enough, induce at once an amendment of the symptoms, and even, at last, an absorption of the superabundant muscular tissue, and thus effect a cure. But in order to secure success, the patient must strictly obey the injunctions given to them; and hence the treatment is more successful in those cases where the lesion has produced great inconvenience and suffering than in those where the patients suffer little, because in the latter case they are unwilling to submit to rules of diet. Under the influence of the milk diet, it is found that the impulse of the heart diminishes, together with the palpitations, and the congested condition of the face, the brain, and the lungs. The patient experiences an unexpected improvement, and by the adoption of this plan life may be prolonged and rendered more supportable; and even where a cure cannot be hoped for, a great palliation of the symptoms may be induced.—*Brit. and For. Med.-Chir. Rev.*, April, 1867, from *Bull. Gén. de Thérap.*, Oct. 30, 1866.

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20. *Chlorinated Mixture in Cholera.*—Dr. W. D. Dobie states (*Edinburgh Med. Journ.*, March, 1867) that in the very numerous cases of severe choleraic diarrhœa which occurred in Chester during the prevalence there of the epidemic, no remedy appeared at all equal to the chlorine mixture made according to the formula given at pp. 248–9 of this No.

"Many patients," he adds, "grateful for the speedy relief, spontaneously said, 'That is a wonderful medicine—I was better after the first dose.' There cannot be a doubt that many of these cases would have passed into true cholera had the disease not been checked in the early stage. This leads me to remark, that in houses where cholera had broken out, I generally ordered the whole family to take a teaspoonful of the chlorine mixture two or three times a day, and in no case, when this plan was adopted in addition to thorough ventilation and disinfection, did the cholera extend to other members of the household.

"Chlorine seems to have a decided effect in restraining the excessive exudation from the mucous membrane of the bowels. The slight acidity of the mixture probably adds to its usefulness, as it has been demonstrated that the osmotic current travels from the acid to the alkaline side of a membrane. The chlorine renders the retained secretions innocuous, and may possibly exert a special action on the blood itself if the osmotic current be reversed, even supposing that all active absorption from the bowels be in abeyance.

"Dr. Alderson, in a very interesting lecture, recently published in the *Lancet*, has called attention to the fact discovered by Poiseuille, that the hydrochlorate of morphia has a remarkable power in checking osmotic action. He goes on to observe, 'It was ascertained by him that when that substance was added to saline solutions the osmotic action tested between them and serum is immediately affected. The current is at first stayed, and after a time is actually reversed. This was confirmed by Bacchati, and it at once reveals the mode of action of morphia in checking diarrhœa, and in promoting constipation.' Further on in the lecture, Dr. Alderson remarks, 'Checking the flow of albuminous fluid

from the bowels, on the principles displayed by Poiseuille and Bacchati, has reason in it; and I should advise for that purpose the use of morphia in the form of hydrochlorate; the hydrochlorate having shown a specific power not only to stay the current, but to reverse it.'

"I should therefore be strongly inclined, in the future of treatment of cholera, to add moderate doses of the hydrochlorate of morphia to the chlorine mixture during the continuance of the diarrhœa, and after its cessation, or when collapse had fairly set in, to give the chlorine mixture alone. I noticed that the chlorine mixture had a remarkably sedative action upon the stomach and bowels; the vomiting as well as the diarrhœa being restrained. My impression is, that the chlorine mixture, with the addition of chloric ether, was better tolerated by the irritable stomach than the diluted chlorine water given alone.

"The pulse, in cases where it was quite imperceptible at the wrist, became in a short time full and strong. The capillary circulation being restored, the surface became warm, and the purplish blue of the skin changed to a more natural hue. The cramps were subsequently less severe. Reaction was seldom violent, and I do not recollect one instance of secondary fever in the cases treated by chlorine.

"The secretions of the liver and kidneys in mild cases were rapidly restored. Another point to be observed is the remarkable comfort it gave to the patients; the excessive restlessness was much mitigated, and one man said, 'I could not live without that medicine.'"

21. *Use of Styrax Liquidus in the Treatment of Itch.*—Dr. W. SCHULTZE has made experiments with a mixture of styrax and olive oil for the cure of itch in the hospital at Magdeburgh. In the use of this remedy, which is to be rubbed over the whole body, with the exception of the head, great care must be taken that no folds of the skin are passed over. Baths are to be used only at the beginning and the end of the treatment for the sake of cleanliness, but are unnecessary in the treatment itself, and washing should also be forbidden. Twenty-four hours after a careful rubbing, the acari taken out of the itch-furrows were all dead. Styrax does not cause any irritation of the skin, and it has no direct therapeutic effect upon the itch eczema, the latter getting well of itself by the expectant treatment, and the itching disappears. Dr. Schultze, in reference to the resemblance in chemical composition between styrax and the Peru and Tolu balsams (also used in treating itch), makes some original remarks on the similarity of therapeutical effects produced by bodies of similar chemical composition. All the substances lately recommended for itch, as balsams, ethereal oils, benzoin, and petroleum, owe their efficacy to volatile hydro-carbonaceous compounds, and their therapeutical effects depend upon the length of time that these bodies are retained on the skin. Benzoin and petroleum are therefore less efficacious than the ethereal oils; but the balsams are better than these, and especially the balsam of Peru. In the experiments made with styrax by Dr. Schultze, the duration of the residence in the hospital lasted two days in twelve cases, three days in nineteen cases, five in seven cases, six in two cases, and seven in three cases.—*Schmidt's Jahrb.*, August, 1866.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

22. *Some Complications of Gonorrhœa.*—Mr. DE MERIC, in a paper read before the Harveian Society of London (Feb. 21, 1867), offered a brief sketch of the common complaint called gonorrhœa, and stated that some urethral discharges were independent of contagion, very simple, easily controlled, and in general free from contagion; whilst others were just the reverse. The first kind of discharge might conveniently be called urethritis; the second, true gonorrhœa. On two complications of the latter—viz., gonorrhœal rheumatism

and gonorrhœal ophthalmia—he wished to present a few remarks. He related, with full details, the case of a gentleman lately under his care, where both complications had occurred. The facts of this case led to the inquiry whether the joint-complication were really dependent on the urethral discharge, or whether it was a mere coincidence. The author believed in this dependence, for the following reasons: Because there was a pathological sympathy, independently of gonorrhœa, between the inflamed urethra and the joints; 2. Because the articular affections have, by many observers, been noticed to exist along with urethral discharges; 3. Because, in certain subjects, joints have been known to suffer at each new attack of gonorrhœa. Those, on the other hand, who consider the so-called gonorrhœal rheumatism as a mere coincidence, alleged that the joint-complaint was observed but rarely, compared with the enormous number of cases of gonorrhœa. This the author not only conceded, but corroborated, by saying that he could, from his own practice, cite but three cases in hospital patients, and seven treated in private. The common cases of rheumatism had, therefore, nothing to do with the joint-complication in patients suffering from gonorrhœa; and we were driven to believe that something peculiarly predisposing must exist in the individual, which, added to the existence of the gonorrhœa, gave rise to the inflammation of the synovial membrane of the joint or the ocular conjunctiva. Nor should it pass unnoticed that the discharge must be *bona fide* urethral to generate the complication; as discharges from the glans, prepuce, vagina, vulva, or uterus, are never connected with rheumatism. Hence the rarity of the complication among women. He had, however, observed one case of this kind. The author now referred to the joints mostly affected; and stated that, out of his ten cases, six suffered in one or both knees, one on the hip, one in the articulation of the jaw, one in the ankle, and the tenth in several joints at the same time. Mr. De Meric then entered into some details respecting these cases, and said that he had not met with any where the tendinous sheaths, bursæ mucosæ, muscles, or nerves, had been affected; or else they had been overlooked, which might easily occur. Turning to therapeutics, Mr. De Meric, referring to the treatment he had adopted in his cases, which treatment had been very active, deprecated the fashion, now much in favour, of doing nothing; the cry now being to cure, or attempt to cure, various affections *without* the remedies hitherto in use. This applied still more forcibly to the eyes. In such cases, we had either to treat rheumatic ophthalmia, mostly connected with the joint affection, or the destructive conjunctival inflammation depending on actual contact with gonorrhœal pus. In both, especially in the latter, most active measures were required. The author had treated the two former successfully; but the cases had been very few—three of the former, and one only of the latter. He was confident that both the joint and eye-complication, which had formed the subject of the paper, deserved much attention, and should be combated with the means which nature had placed in our hands.—*British Med. Journal*, March 23, 1867.

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23. *Shampooing in Sprains.*—M. Berénger-Féraud observes that it is remarkable that while some therapeutical agents are at once and even prematurely adopted, others, the efficacy of which has been well attested, remain for long periods neglected. As examples of this, he instances the alcoholic dressings of wounds, the forced taxis in hernia, and shampooing (*massage*) in sprain. Confining his attention to this last, he cannot but feel surprised that it has not become generally adopted, after the testimony of MM. Nélaton and Demarquay, and of so many recorded cases, in its favour. He does not think that the uncertainty of results, the fact that it is a practice followed by bone-setters, or our ignorance of the *modus faciendi*, ought still to be urged as reasons for its neglect. He furnishes a long array of references to cases in which the practice has proved thoroughly successful; and he argues that we should, by its scientific adoption, take a means out of the hands of charlatans which has very often conduced to their reputation. As to the manner of procedure, that may be easily acquired. As soon as the diagnosis has been made, very gentle passes are to be executed with the pulp of the thumb or the fore fingers in the direction of the periarticular tendons if a joint is the seat of sprain, or in that of the

fleshy fibres when this is muscular, employing from time to time some fatty body so as to prevent the skin becoming irritated. The friction must be directed from the extremity to towards the root of the limb, commencing some distance below the seat of pain and extending considerably above this. Gradually, as contact can be better borne, the pressure employed must be progressively increased, until at last considerable force is employed, the *massage* being continued for a quarter or half an hour, a whole hour, or more, until the pain ceases and the tumefaction has diminished. From time to time, slight intermitting pressure or percussions are employed, while the joint itself is moved. These movements, scarcely perceptible at first, are gradually to be increased, until at the end of the *séance* all the proper motions of the part are easily executable. In this procedure the pain must always be kept within bearable limits; and, in fact, its whole principle consists in enabling a part, for which the slightest touch is at first so painful, by the aid of carefully directed efforts, to execute all its natural motions with complete ease. The manipulations over, cold lotions are to be applied and rest enjoined. As to their repetition, this will vary in different cases, and will be indicated by the reappearance or augmentation of the pain after amelioration. In a recent case, and when the swelling is slight, one or two manipulations of moderate length and activity are often sufficient to secure a cure; while, if the sprain date back for days or weeks, and the lesions are deeper seated, more powerful and more prolonged procedures are required. In one of the cases which M. Berénger-Féraud relates, a chronic sprain had to be brought, so to say, to the acute stage before it could be relieved.

In reply to the question whether sprain can always be thus cured, it may be answered affirmatively whenever we have to do with a simple case, unattended by severe complication, such as considerable laceration of ligaments, detachment of tendons, fracture of articular surfaces, and lesions of important vessels or nerves; and also when the manipulation is conducted with skill and patience during a sufficient period of time.—*Brit. and For. Med.-Chir. Rev.*, April, 1867, from *Bull. de Thérapeutique*, Jan. 30, 1867.

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24. *On Opening Joints when the Seat of Traumatic Suppuration.*—Prof. ROSER observes that it is remarkable that difference of opinion should still prevail respecting J. L. Petit's practice of freely opening the joints when the seat of traumatic suppuration. It has not been for the want of opportunity, seeing the numerous bloody wars which have been waged since the time he wrote. But practitioners have approached the subject with preconceived notions which have prevented them profiting by experience, while the complications attendant upon the occurrence have surrounded it with difficulties. Under the influence of these Petit's practice has often been supposed, erroneously, to lead to unsatisfactory results. Thus, 1. Hemorrhage following the incision, its arrest by stuffing the wound with *charpie* would only aggravate the condition of the abscess. 2. In dread of such hemorrhage, the incisions were made too small, the wound either closing again, or valvular apertures preventing complete evacuation following. 3. Pyæmia frequently followed the incisions. At no time were *débridements* more eagerly practised than at the epoch of Dupuytren and Rust; and nowhere was pyæmia more rife than at the Paris Hôtel-Dieu and the Berlin Charité, so that the incisions came to be regarded by some as rather provocative than preventive of this complication. 4. Owing to the faulty mode of adjustment, a distorted or contracted limb was a common result. 5. Even when the operation was primarily successful, the healing of the parts was often delayed, and separation of cartilage and usure of the bones subjected to pressure were mistaken for caries.

At the present day these grounds of objection no longer exist. Hemorrhage is avoided by the methodical exposure and incision of deep-seated parts, under chloroform if required. The production of impediments to the free exit of the discharges by the valvular character of the apertures being recognized, can be easily guarded against. Pyæmia is no longer sought to be prevented, as in Dupuytren's time, by antiphlogistics, but by the dispersion or isolation of the patients, disinfection, ventilation, &c. The improved apparatus now in use

prevents the contraction of the limb; and with a more careful diagnosis, there is no longer fear of confounding usure of the epiphyses with caries, a more speedy healing of the parts being also aided by the employment of the gypsum bandage. The essential point in this mode of treatment is not the *débridement* once so considered, but the complete evacuation of the decomposed exudations. This can only be accomplished by free openings, small incisions either closing up again or giving rise to valvular apertures. In all probability, such incisions will hereafter be resorted to more frequently for all the joints, and will be found a more conservative practice with respect to gunshot injuries of the hip and shoulder than the primary excisions now practised with such indifferent success. At all events, such free incisions should be resorted to when primary excisions have not been indicated or have been neglected. and when considerable collections of matter have taken place.—*Brit. and For. Med.-Chir. Rev.*, April, 1867, from *Archiv der Heilkünde*, 1866, Heft 6.

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25. *Injuries of the Head.*—Prof. Roser is desirous of calling the attention of practitioners to a few points which he believes possess some novelty:—

1. *A traumatic brain-sound.*—This is heard in open wounds of the skull accompanied by an aperture in the dura mater, without injury to the pia mater; and it arises from the entrance of the air during the subsidence of the brain, and its exit on the heaving-up of the organ. Professor Roser has observed this sound twice at his Marburg Clinic. In one of the cases, a small rent in the exposed dura mater was covered with blood; and whenever this was displaced by coughing, a clacking sound became plainly audible by all present. In the other case, the patient stated on his entrance that there was a whistling noise in his head; and a hissing noise was heard by all the assistants.

2. *The pulsations of the brain when the dura mater is laid bare are sometimes absent.*—Judging from two such cases in which an autopsy took place, this would seem to be a sign of abscess behind the dura mater. In fact, the presence of a circumscribed exudation or extravasation may, by compression of the corresponding portion of the brain, render this anæmic and incapable of expansion during the systole. It might be supposed that this absence of pulsation is due to the feebleness of the heart's action during the agony of death; but in one of the author's cases the patient retained all his strength.

3. *The discharge of fluid from the cavity of the arachnoid is significant of superficial injury to the brain.*—When this is more considerable, a protrusion of cerebral substance, impeding the flow of the fluid, is more likely to take place. In none of his cases of considerable injury has Professor Roser observed this flow of fluid, while he has seen it continue for several days in some cases in which the injury has been obviously superficial.

4. In some cases in which the brain has been laid bare and the injury is only superficial, a kind of *fistula* may be formed analogous in its mechanism to fistula of the cornea. Just as in this there may be observed an interrupted flow of the aqueous humour, so in a case of exposed brain the author saw a similar discharge during the third and fourth week after the injury. While the wound was granulating most kindly, a bladdery projection appeared in its midst, and, bursting from time to time, spirted out clear water. This ceased as the wound cicatrized, leaving only a slightly prominent cicatrix.—*Brit. and For. Med.-Chir. Rev.*, April, 1867, from *Archiv der Heilkünde*, 1866, Heft 6.

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26. *Extensive Fracture of Pelvis without Lesion of the Pelvic Viscera.*—Dr. Quinlan brought under the notice of the Dublin Pathological Society (December 8th, 1866) a remarkable case of this. He said that the specimen was taken from the body of a female, aged thirty-five, who was, upon the 18th of November, knocked down and run over by a horse, yoked to a heavy country cart, which was, however, empty at the time of the accident. Her symptoms were at first those of collapse; and when reaction had set in it was found that there was a fracture of the ala of the left ilium and a counter-fracture of the right os innominatum; the fracture of the left side being produced by the direct violence of the wheel passing over that side of the body, and that of the right by the pelvis being "stove in" by the agency of the head of the right femur,

which, by means of the right great trochanter resting upon the ground, acted as a wedge. Swelling and œdema of the right thigh and iliac region followed, and ended in a deposition of matter underneath the fascia of the right iliac fossa and down along the sheath of the vessels of the right thigh. There was a great deal of localized peritonitis in the right iliac region. The patient finally sank, from pelvic cellulitis, upon the eighteenth day.

A *post-mortem* examination was made twenty-four hours after death; and upon opening the abdomen there were found, in the right iliac region, a fluctuating swelling, to which the cæcum was attached by lymph, the result of the circumscribed peritonitis above alluded to. The cæcum was dark-coloured and inflamed, but there was no communication between it and the swelling. Laying open this latter there was found a great deposit of purulent matter, which was traced along the psoas muscle as high as the fourth lumbar vertebra, downwards, half way down on the thigh, along the sheath of the vessels, and inwards to a fracture of the os pubis, which will presently be described. This cavity contained, in addition to pus, some aplastic lymph and ecchymosed blood. Along the right ilio-pectineal line there was extensive ecchymosis under the peritoneum, as if the wheel, after leaving the ala of the left ilium, had pressed down upon this part. The bladder, vagina, uterus, rectum, and intestines were carefully investigated, and were found uninjured. Upon examining the osseous structures of the pelvis there was found, in the left os innominatum, a fracture extending from beneath the anterior inferior spinous process to a point about an inch behind the anterior superior spinous process, and breaking the piece off. There was another fracture commencing about an inch in front of the posterior superior spinous process, and running into the left synchondrosis. In the right os innominatum, where the counter-fracture had occurred, there was a longitudinal fracture, commencing at the upper and outer part of the obturator foramen, and extending backwards through the acetabulum and the ala of the ilium to the crest, at a point about two inches in front of the posterior superior spinous process. From the centre of this fracture there was another, extending through the ala of the ilium and the anterior superior spinous process. Turning to the acetabulum, the great longitudinal fracture, already described, was found passing through this cavity in a line slightly above its notch. From this there branched off a fracture of the shell of the acetabulum, running across the whole cavity. The cartilage of the head of the femur opposite these two fractures was eroded; and around the erosis the cartilage was very vascular. In the right pubic ramus there were two fractures, one of the thin portion of the descending ramus a quarter of an inch above the point of fœtal union, and the other of the ascending ramus of the ischium where it joins the tuberosity. Lastly, there was a dislocation of the symphysis pubis, the right pubes being dislocated forwards and slightly upwards, the inter-articular cartilage remaining attached to the left pubes, and having still connected with it a fragment of the right pubic bone. The sacrum and coccyx were uninjured.—*Dublin Quarterly Journ. of Med. Sci.*, Feb. 1867.

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27. *Spontaneous Fracture.*—Dr. CASPARY relates the following interesting case, occurring in the person of a short, strong, healthy man, twenty-six years of age: In June, 1866, while ascending two steps which led to his dwelling, he felt a peculiar sensation in the left leg, as if unable to bear the weight of the body. He got indoors, however, and was even able to sit at table; but when he arose and attempted to walk, he cried out that he heard his leg crack, and that it was coming asunder. He could no longer stand, and was conveyed to bed. On examination, there was found to be a transverse fracture of the tibia at the junction of its upper and middle thirds, with but little mobility, and no crepitation or displacement. The patient exhibited no sign of rickets, nor did the bone itself present any abnormal character. A gypsum bandage was applied, and the limb laid on a firm mattress. The patient lay very quietly and without suffering; but when the bandage was removed, after three weeks, the limb remained precisely in the same condition. Under the advice of Dr. Wagner, assistant at Langenbeck's Clinic, the iodide of potassium was administered, that surgeon having found it of great utility in several cases of fracture of difficult

consolidation. In this case it proved of no utility, as at the end of another four weeks union had not taken place. A very thick gypsum bandage, which reached up above the knee, was now applied, and the patient was directed to walk about, which he was soon able to do tolerably well with a stick. In twelve weeks, and five months after the occurrence of the fracture, bony union had taken place. The most careful investigation of this case failed to show any general or local pathological condition capable of explaining the occurrence of the spontaneous fracture.—*Brit. and For. Med.-Chir. Rev.*, April, 1866, from *Berlin Klin. Wochenschrift*, 1867, No. 4.

28. *Internal Strangulation of the Bowel by a Band, associated with a Reducible Hernia, successfully treated by Operation.*—Dr. Thos. Bryant related to the Royal Med.-Chir. Society (March 12, 1867) a case of this to which he was called by Dr. Wilkinson. It was that of a gentleman, æt. 51, who had been ill for several days with symptoms of intestinal obstruction. The patient had been the subject of an inguinal hernia on the right side for twenty-five years for which he had worn a truss; during that period the bowel had come down on several occasions, but it had only given pain on one—some six months previously. On the morning of December 28, during the exertion of dragging up a tree, the hernia partially descended, but it was at once readily returned on the application of the hand; vomiting, however, soon appeared, and pain situated on the right side of the umbilicus. These symptoms continuing on the 29th and 30th, and increasing in severity, Dr. Wilkinson was sent for. A careful examination was then made, but no hernia was found; there was a large opening into the abdomen, but no swelling or pain even on deep pressure being made. On December 31 (the third day), the symptoms becoming more severe, and vomiting being fecal, Dr. Wilkinson, who saw the necessity for an operation, called in the assistance of the author. The seat of the hernia was then examined, but no indications of anything wrong in these parts could be made out, yet marked symptoms of intestinal strangulation existed; the pain in the abdomen was very severe; it was situated to the right of the umbilicus, and paroxysmal. Under these circumstances an exploratory operation in the region of the hernia was proposed, and power given by the patient to do whatever might be deemed the best. Chloroform was given, and the ring of the direct inguinal hernia exposed; no signs, however, of any strangulation of the bowel by the parts concerned in the hernia could be made out. A piece of omentum existed in the hernia sac, but no bowel. The finger could also be readily passed into the abdomen, and the neck of the sac was perfectly free. The bowel which came into view was, however, clearly strangulated, for it was of a bright cherry colour, und œdematous. Under these circumstances the ring was enlarged upwards and the strangulated bowel drawn down; the finger of the author's right hand was then passed along the bowel, used as a guide, upwards into the abdomen towards the point of fixed pain. When it had been passed as far as it could go, and as much traction had been put upon the bowel as was deemed justifiable, a tight band was clearly felt. The abdominal incision was then enlarged, and the band, which was made tense by the finger, was carefully divided by a pair of scissors passed into the belly, its points being well pressed into the pulpy portion of the finger till the band was reached. The wound was then closed. On the third day the bowels acted naturally, and a rapid convalescence followed. The author then made some few remarks upon the case, stating that it must be looked upon as one of strangulation of the bowel by a band, and that the hernia had nothing whatever to do with the symptoms. He then passed on to consider the points in the case with reference to the diagnosis, and related the particulars of a similar case which took place in his practice six years previously, in which such an operation as he had performed was proposed, but abandoned, and the patient died unrelieved. An analogy between the successful and fatal cases was then drawn, and the special practical points dwelt upon, the author concluding by stating that he was disposed to believe that in many cases of intestinal obstruction, when the symptoms are marked, and pain fixed and paroxysmal, whether with or without a hernia, relief might often be afforded by an operation, where

they are now left to die; and he expressed a hope that the cases he had brought before the notice of the Society would do something towards the attainment of that end.—*Med. Times and Gaz.*, March 23.

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29. *Paraffo-Stearine as a Substitute for Starch, Plaster of Paris, &c., in Bandages and Splints.*—Mr. JAMES STARTIN states (*British Med. Jour.*, March 30, 1867) that he has been using what appears to him "to be an inexpensive, useful, cleanly, elegant, and efficient desideratum, in the treatment of varicose veins and diseased joints, instead of strapping, and also in all maladies or injuries where rest, equable support, and solidity of the parts affected are required. This consists in immersing 'Domett flannel,' 'Welsh flannel gauze,' the woven elastic or other bandage, or felt, either the common carpet felt or that prepared for surgical purposes, in a combination of equal parts of rock paraffine and stearine, as used for candles, which may be coloured to a flesh-tint with alkanet root, and liquefied to a little beyond the melting point (160° Fahr.), so as to render the composition of a temperature that may be readily manipulated without injury to the hand or part on which it is applied. Rollers or felt, the latter cut into the shape of the splint required, are to be saturated with the above melted composition, and applied whilst warm and flexible to the limb or joint; when, if needed, further strength and solidity may be given by varnishing a portion of the melted composition over the splint or bandage with a painter's brush, and afterwards smoothing the whole with the palm of the hand, until it assumes the surface of ivory, or the well-known appearance of a paraffine or stearine candle. A fold of linen, dipped in cold water, is finally to be passed round the bandage or splint, which immediately solidifies the melted paraffo-stearine, when the application is complete; and the wet linen may be continued as an evaporating lotion, if desired. Into this bandage or splint, openings may be readily cut by means of scissors curved on their cutting edge into the segment of a circle, or bent to an obtuse angle; the melted composition being afterwards applied over the cut edges of the opening, so as to form a complete solid case, allowing the escape, through such openings, of discharges, and the application of dressings. It will be perceived that, by dividing the paraffo-stearine bandage, and removing, say half an inch, or separating it into halves, and trimming the edges in the usual manner, splints will be formed having the exact configuration of the part to which they are to be applied, and that these splints can be lined with flannel, wash-leather, etc., and strengthened with the melted paraffo-stearine to any extent required."

Mr. Ewen, of London, he says, supplies the felt in sheets of convenient size, saturated with the composition, from which the splints can be cut, and after they have been moulded to the part requiring them as described.

All that is needed before employing these appliances, as prepared ready for use, is to put the canister containing the bandage and a portion of the paraffo-stearine for varnishing into boiling water until liquefied; and the piece of prepared felt may be held before a fire or immersed in water a little below the boiling point, until it acquires the requisite flexibility, when it can be fixed where required by the ordinary procedure, varnished and finished by the aid of the canister of paraffo-stearine and brush sold with it, and finally solidified by surrounding it with linen dipped in cold water. Or, the whole of the appliances described can be readily extemporized by the aid of a pound or two of paraffine or stearine candles, a jug or jar in a saucepan of boiling water for melting the same, a rolled flannel, Domett, or other bandage, and a shaving-brush; or, should a splint and not a bandage be preferred, a strip of felt carpet, cut into the required shape, and also rolled together, so as to be immersed in the melted candle composition in the jar.

When a removal of a bandage is required, Mr. S. says it may at once be softened and taken off by brushing it over with benzine. This last article, he adds, "will be found a most useful surgical accessory, not only to clean the skin and hair from all their natural or acquired oily or sebaceous secretions, but also to remove grease, plasters, etc., from the cutaneous surface without causing local irritation."

30. *Dressing for Wounds.*—M. Foucher employs the following mixture as a dressing for wounds: Alcohol 400 parts; glycerine 625 parts; chlorate of potash 40 parts. This forms a transparent fluid which does not stain the dressing, and may be very useful in flaccid or unhealthy wounds.—*Journ. de Méd. Pract.*

OPHTHALMOLOGY.

31. *Relative Value of Atropia and of Mercury in the Treatment of Acute Iritis.*—Mr. T. Pridgin Teale, of Leeds, states (*R. L. Ophthalmic Hosp. Rep.*, vol. v. pt. 2, April, 1866) that during the last two years and a half, he has recorded in a tabular from the cases of acute iritis which have come under his care, in order to test the value of certain views of treatment which he has arrived at from the observation of such cases. He excludes from his table all cases of traumatic origin, all those which are secondary, *i. e.*, caused by extensive adhesions of the iris to the capsule of the lens left by previous attacks, all subacute forms travelling forwards to the iris from the deeper structures, and all cases occurring in children. These are excluded in order to simplify the inquiry, and restrict it to those acute forms, generally syphilitic, which occur in the previously healthy eye of the adult, and which, if neglected, rapidly endanger vision.

The table comprises 22 cases, and they seem to Mr. T. to justify the following conclusions and principles of treatment:—

"1. Iritis can generally be cured, quickly and perfectly, by atropine alone, or by atropine and mercury combined, without the aid of other remedies. How far opium, blisters, leeches, and venesection aid and accelerate progress I have not yet tested, wishing in the first instance to determine the value of the remedies under consideration, and then to make the results herein obtained a starting-point for further inquiry.

2. The presence or absence of syphilis does not affect the question of treatment.

3. Many, perhaps one-half, of the cases of iritis, *whether syphilitic or not*, can be cured by *atropia alone*.

4. Those cases in which atropia fails to dilate the pupil in 24 or 48 hours require mercury. In occasional cases the application of leeches renders an eye susceptible of dilatation which at first was unaffected by atropia.

5. When mercury is required it ought to be introduced into the system rapidily.

6. If the system is to be affected by mercury, the mercury ought to be introduced by *the skin*, *not* by the *stomach*. When this drug is introduced by the stomach the digestive powers are depressed at the very period when their healthy function is most needed. When introduced by the skin its full remedial effects are obtained without any impairment whatever of the powers of nutrition. It is my rule never to introduce mercury by the stomach when I wish to obtain rapidly the constitutional effects of the drug.

7. In those cases which require mercury it is sufficient to render the gums slightly tender. When the gums are even slightly affected we have therein evidence of the introduction of mercury into the system in quantity sufficient to turn the scale in favour of health, and carry the case to a successful issue. Therefore the moment we find the gums undoubtedly tender, or beginning to be tender, we may suspend the drug.

8. In most cases the constitutional effects of mercury, indicated by tender gums and improvement of symptoms, may be obtained on the second, third, or fourth days, provided the patient be confined to bed. Absorption of mercury by the skin appears to be *much more* rapid when the patient is confined to bed than when he is allowed to go about as usual.

9. Atropia should be used during the whole period of treatment, except where it causes great pain or increases conjunctival irritation, in which case it

may be *temporarily* suspended, or dissolved in glycerine and applied to the skin.

10. That in cases requiring mercury the coincidence of tenderness of gums, of relief from pain, and of the action of atropia on the pupil is almost absolute, even to an hour or two. Perhaps in cases more severe than those recorded, with great effusion of lymph, the visible effects of atropia may be delayed till a later period. On this point I do not possess evidence.

Let us now inquire how far these conclusions are justified by the cases, and what are the general results of treatment.

Treatment.—Of the 20 cases, eleven were treated by atropia alone, nine were treated by atropia and mercurial ointment combined. In one or two cases a dose of Dover's powder was given when pain was excessive, and in some others salines were given during the application of the mercurial ointment if the skin were hot and not perspiring. Leeches were used, I believe, in three cases only. Two cases had taken mercury before coming under my care.

Question of Syphilis and its relations to Treatment.—Thirteen cases were undoubtedly syphilitic. Of these five required mercury, eight recovered under atropia alone. In seven, syphilis was either denied or not made out. Of these, four required mercury, three were cured by atropine alone.

Rapidity of Mercurial Effects.—Of the nine cases in which mercury was required, one used the ointment 24 hours, a second 24 hours, having previously taken blue pill five days without benefit; a third and fourth used the ointment two days, a fifth and sixth three days, a seventh and eighth four days, the ninth twelve days. So that of nine cases of iritis in which mercury was used, one only required the application of the ointment for more than four days.

Rapidity of Recovery.—Of the 20 cases, seven recovered good sight and pupil within two weeks, one within a 'short time,' five within three weeks, three within four weeks, three within eight weeks, one within three months, the 20th was relieved from pain with partial recovery of sight.

Perfection of Sight.—Fifteen read No. 1 Jaeger, three (including the second eye of one case) read No. 2, two read No. 6, one could read No. 18.

Perfection in Pupil.—Twelve recovered with a perfectly active pupil free from adhesions, in five there was slight or single points of adhesions, in one there was closed pupil, and in two the condition of pupil is not recorded.

Duration of Disease before Treatment.—In eight the disease had existed not more than a week before coming under my care, in four not more than two weeks, in six less than two months, in one three months, and in one three months and a half.

Condition of Vision before Treatment.—In six cases vision was limited to perception of shadows; in two it is described as dim; in two the patient could not read Jaeger No. 20; in three the patient read No. 20; in two No. 16; in three No. 4; in two the condition of vision is not recorded.

Disappearance of Mercurial Effects.—In all the cases, although no special note is made on this point, the constitutional effects of the mercury passed off in a day or two, and in none do I recollect to have met with any injurious effect whatever which could be traced to the use of mercury.

Relapse of Iritis.—In one case only have I any record of a relapse, and this relapse disappeared rapidly under atropia alone. This fact tends to confirm Gräfe's assertion 'that the principal cause of recurrence of iritis is the existence of synechiæ,' in other words, when iritis is cured with a pupil free from adhesions it seldom evinces a tendency to recur.

Mode of using Atropia and Mercury in Iritis; Use of Atropia.—On first seeing a case of iritis, whatever its degree, I order atropia, of the strength of two grains to the ounce, to be dropped into the eye six times, at intervals of five minutes in the morning, and six times also in the evening. On the following day, if the pain is lessened and the pupil is beginning to dilate, I conclude that the case is slight, and that atropia alone will cure it. If, however, the pupil is affected, and the symptoms are unabated, I commence mercurial treatment without delay.

Use of Mercury.—The patient is ordered to lie in bed, to wrap round each arm a broad piece of flannel, well smeared with mercurial ointment, and to wear

this mercurial bandage until the gums are slightly tender, a small quantity of fresh ointment being added every evening. It is not necessary to *rub in* the ointment. I suspect that the 'rubbing in,' by producing irritation, impairs the absorbing power of the skin.

Discontinuance of the Mercury.—As soon as the symptoms of the disease begin to abate, or the gums begin to be tender (and these two conditions are generally coincident) the mercury is discontinued. In none of these cases has mercury been given by the mouth (except in two cases, which had been so treated before coming under my care), and in none has the ointment been rubbed in.

Discontinuance of the Atropia.—As soon as the pupil is fully dilated, as far as any adhesions will permit, the instillation of atropia is reduced to once or twice a day, and continued at this rate as long as redness or tenderness of the eye remains.

This mode of treating iritis coincides very nearly with that described by Gräfe (*on Iridectomy*, New Syd. Soc., 1859) in using atropia as the main remedy, and mercurial inunction in cases too severe to yield to the atropia. It differs from it in dispensing with *rubbing in*, and with the use of mercury by the mouth. Mr. Dixon, in his early remarks on iritis, condemns belladonna; in his later work he speaks timidly of its use as an appendage to other treatment. The cases here recorded prove Gräfe to be correct in claiming atropia as the sheet anchor, and in making other remedies subordinate.

William Lawrence and most ophthalmic writers give mercury by the mouth, and do not mention its introduction by the skin. They speak of the coincidence of the improvement in the symptoms with the first appearance of constitutional effects of the mercury, and make this the signal for the reduction, not as I have done, for the entire omission of mercury.

Blood-letting, local and general, is usually urged as indispensable in iritis. That it is not so I think the foregoing cases prove. I believe, however, that local blood-letting may be a valuable addition to other means of treatment, and that it facilitates the absorption of atropine, and accelerates its effects.

Note on the Action of Atropia.—Writers on iritis generally rest the credit and value of atropia or belladonna on its power of dilating the pupil, in setting at rest the muscular tissue of the iris and ciliary body, and in diminishing the risk of the formation of synechiæ. I cannot, however, but suspect that it does more than this, that it acts as a direct sedative on inflamed and congested tissues, and that much of its power depends upon its influence in contracting the bloodvessels. I cannot in any other way explain the remarkable value of this drug in many cases of ulcer of the cornea, and so-called strumous ophthalmia, a large proportion of which I treat by atropia only. Nor can I explain in any other way the immediate improvement, and rapid and complete recovery by means of atropia alone, of many cases of syphilitic iritis. That atropia does reduce the size of bloodvessels I have no doubt, having several times satisfied myself of the fact by observing the calibre of delicate vessels traversing the cornea before, and shortly after the instillation of atropia."

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32. *Inflammation of the Eye occurring some little time after Smallpox.*—Inflammations of the eye not unfrequently occur in patients convalescent from smallpox. Mr. HUTCHINSON states (*R. L. Ophthalmic Hosp. Reports*, vol. v. pt. 4) that: "At the Ophthalmic Hospital we not unfrequently admit cases of this kind. The eye having been attacked at a period varying from three to six weeks after the outbreak of the exanthem, a central ulcer of the cornea is the most common condition, and I have rarely seen both eyes affected, the ulcer frequently spreads rather widely, but not deeply. It is exceedingly intractable. There does not appear to me to be any good reason for alleging that these cases are merely scrofulous ophthalmia brought into action by the debilitating influence of a severe disease. Sometimes it occurs in delicate children, but half the cases I have seen were in adults of good health and who had never shown any indications of scrofula; nor could the keratitis be regarded as the direct result of debility, for the patients had regained appetite and a fair amount of strength, as proved by the fact that they were attending as out-patients, and in

the habit of walking considerable distances. Tonics do not appear to assert any material, or, at any rate, not quickly, and change of air has in one or two instances been the only influence under which benefit was obtained. A mild form of iritis also sometimes occurs as a sequela of smallpox. I have seen three or four instances of this, in two, at least, of which there was no inflammation of the cornea. I do not ever recollect to have seen both eyes affected.

Dr. Mackenzie mentions iritis as a not unfrequent combination of post-variolous keratitis when it occurs in adults; but he speaks of it as usually occurring about the twelfth day. That is, at the date at which the severe ulcerations of the cornea with hypopyon, &c., are usually observed. The cases to which I refer were examples of almost pure iritis, and some of them were at much later periods."

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33. *Loss of the Left Eye from the Lodgment within it of a Portion of a Gun-Cap. Inflammation of the Stump more than Seven Years after the Injury, followed by Sympathetic Ophthalmia of the Right Eye.*—Mr. GEO. LAWSON, Ass. Surg. Royal London Ophthalmic Hospital relates (*R. L. Ophthalmic Hospital Rep.*, vol. v., pt. 1) the following very instructive case of this.

Geo. S., æt. 33, by trade a confectioner. Eight years ago, by way of amusement, he was exploding some percussion caps by striking them with a hammer on a stone. The caps were cheap ones, which he had procured at what he called a cheap Birmingham shop, in the country, at the price of 25 for a penny. Whilst so engaged a fragment of one of the percussion caps flew into the left eye, and there lodged itself.

The eye inflamed and suppurated, and, after much suffering, shrunk to a mere stump; but the foreign body, as far as he knew, still remained in the shrunken remnant of the eye. From that date, for more than seven years, he was completely free from pain; the lost eye gave him no inconvenience. The sight of the right eye was remarkably good, for he was a crack shot at long distances in the volunteer company to which he was attached.

Last February, for the first time, the stump of the left eye became painful and inflamed, and soon afterwards he noticed the sight of the right eye was foggy, but he suffered no pain in it. This attack continued about three weeks, the sight of the right eye becoming rapidly worse. Under treatment he recovered, but the sight of the uninjured eye was much impaired. Since then the stump has been repeatedly inflamed, and with each attack the right eye has sympathized, and on one occasion became acutely affected and very painful.

After each attack the sight of the right eye was materially injured, and although all irritation would for a time subside under treatment, yet he never regained any of the vision he had lost.

On September 22d he applied to the Royal London Ophthalmic Hospital. The following was the state of the two eyes:—

Left Eye.—A shrunken and contracted stump, inflamed, and looking red, and irritable. Through the centre of some cicatrix tissue, which occupied the place of the cornea, was projecting a metallic point, evidently the extremity of the piece of the percussion cap which had been so long lodged in the eye, and which was now making its way to the surface.

Right Eye.—Slightly pink and irritable. The cornea clear. The pupil fully the normal size, but fixed and completely adherent to the lens capsule, and the pupillary area of the capsule of the lens covered with a film of lymph. The striation of the iris very indistinct, and the anterior chamber very shallow, the plane of the iris having been approximated towards the cornea.

He is unable to read 20 of Jaeger's test types or to count fingers. He can only just make out the hand when held before his eye, or distinguish any large object in front of him.

He was at once admitted into the hospital, and I removed the stump of the lost eye. On making a section of it, the piece of the percussion cap was seen to have made its way towards the surface, and was projecting by one of its edges through the cicatrix tissue in the front part of the stump.

The deep tissues of the eye were all so matted together as not to be recognized.

The man made a good recovery from the operation, and will continue to attend the hospital as an out-patient. The right eye has decidedly improved. It is less irritable, and the pink appearance has disappeared. No amendment, however, can take place in the vision until some operation has been performed, as the pupil is bound down to the lens capsule, and the pupillary area is blocked up with lymph.

Clinical Remarks.—This case is a sad, but a very instructive one. It illustrates the danger of allowing a foreign body to remain in the eye, even though the eye for all useful purposes has been destroyed by it. Sooner or later it is certain to be a source of pain and trouble to the patient, and to induce an inflammation in the injured eye, which is peculiarly liable to excite a sympathetic ophthalmia in the sound one. In this patient there are some points worthy of notice.

1st. The injury was caused by the explosion of a cheap percussion cap. Unfortunately these cheap caps are made of an inexpensive and brittle alloy, and scales of them often become detached during explosion, and fly off with such violence as to lodge themselves in any portion of the body with which they come in contact. In nearly all the eyes which are destroyed by percussion caps, and they are many, it will be found on inquiry, that the caps used were the toy, or the cheap ones, such as children buy for their play guns, or such as are employed in firing at targets in the streets for nuts.

2d. The length of time which a foreign body has remained imbedded in an eye, is no guarantee that the danger of its presence has passed. In this patient over seven years elapsed before it began to give trouble, but when the stump of the lost eye became inflamed, the sound eye was speedily involved in that terrible disease, now so well known as sympathetic ophthalmia.

3d. The sound eye in this patient was sympathetically affected without its suffering in the first attack any pain as a warning of its presence, and this is one of the peculiarities of the disease. It will often creep on unheeded by the patient, the impairment of the sight being so gradual as at first not to draw sufficient attention to it; and it frequently happens that the disease is fully established before it comes under the surgeon's care.

Since the source of irritation, the stump of the lost eye, with the foreign body within it, has been removed, the other eye has decidedly improved.

Time must now be allowed for all irritation to completely subside, and after an interval of some months if the eye continues so long in a quiescent state, an operation will be performed to establish a new pupil, and if the lens on the removal of a portion of the iris, should be found cataractous, it will be removed. There is yet a fair prospect that the man may recover a useful eye.

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34. *On Excision of the Eyeball in the Acute Stage of Traumatic Ophthalmitis.*—By Jonathan Hutchinson, Esq. As an opinion is, I believe, held by some high authorities that the excision of globes when acutely inflamed is dangerous, I think it desirable to record the fact that during the last year I have performed numerous such operations without the slighest ill result. Whenever I am satisfied that an injured globe is utterly lost, I always advise its excision without loss of time. By adopting this course the patient's suffering, often extreme, is at once put an end to, and I think, also, the risk of sympathetic inflammation of the other eye is avoided. I have excised globes in all stages of inflammation, and have never seen the slightest ill consequence, whilst the patients have invariably been most grateful for the complete relief afforded. The hemorrhage is usually rather more than when the cellular tissue is not infiltrated, and the operation is much less easy of peformance (especially when the globe is in a state of proptosis from inflammation), but these are objections of very minor consequence. In a recent case of peracute inflammation after a blow, in a poor girl of 18, the globe was pushed out of the orbit by swelling, the lids partially everted, and the conjunctiva chemosed. In this case, owing to the matting together of the tissues, and the soft, flabby state of the sclerotic, I had more difficulty in the excision than I could have believed possible. Although, after the removal of the globe, the lids were still left tense, dusky, and prominent from swelling, yet the most complete relief was given, and the patient, who had

been out by ten days and nights' incessant suffering, was looking quite happy on the following day.

A month ago I excised an eyeball on account of traumatic ophthalmitis within forty-eight hours of the accident—by much the shortest period within which I have ever felt justified in advising the operation.[1] A lad of 14 was going through the street one Saturday evening, and stopping to watch a man shooting on a nut-stall, the cap flew, and a fragment entered his eye. Severe pain commenced at once. He came to me on the Monday morning with a small hypopyon, the posterior lamina of the cornea dotted over with small accumulations of puro-lymph, acute iritis, and opaque vitreous. He had no perception of light. Mr. Dixon and Mr. Streatfeild both saw him with me, and both agreed in the opinion that, although the cornea was still almost clear, there could be no doubt that the organ was lost. The lad willingly consented to its removal, so great had been his suffering. After excision I found a portion of gun-cap behind the ciliary processes, the whole region of which was covered by puro-lymph in a coherent membrane. The vitreous was still, for the most part, translucent; but in various parts of its substance films of yellow lymph were visible. There was also lymph on the surface of the retina at almost all parts. At so early a stage of the inflammatory process, in such a structure, microscopic examination would have been most interesting, but I was compelled, by the pressure of engagements, to let the opportunity slip.—*Royal London Ophthalmic Hospital Reports*, Dec. 1866, vol. v. pt. 4.

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35. *New Method of Extracting in Cases of Cataract.*—Dr. C. B. TAYLOR, Surgeon to the Nottingham Eye Infirmary, writes to the editor of the *Ophthalmic Review* (see No. for April, 1867) that he "was led to work out this method from observing the disastrous results of two cases operated upon with Schuft's spoons, and from having in my own practice a case operated upon by Mooren's method, in which the flap was accidentally turned down some hours after the successful completion of the operation. It struck me, then (Oct. 1865), that, to insure success in such cases, it would be necessary to make an incision flap-like, and large enough to permit the exit of the lens without the use of any traction instrument, and yet not so large as to be liable to be forced forwards by protruding vitreous, or reflected by any sudden accidental or involuntary motion of the patient. After numerous experiments upon pigs' eyes, and some operations on the dead subject, I arrived at a solution of the problem, and have since operated by the method about to be described, in all cases of senile cataract coming under my care."

He calls this method "extraction by linear flap." In his first cases he "used a ground-down cataract-knife, reduced to about the size of the ordinary secondary cataract-knife, sold in most cases of ophthalmic instruments; but since reading an account of von Gräfe's method, I have adopted his knife. As the risk, even if vomiting occurs, is very slight with this form of incision, I prefer to have the patient narcotized. Keeping the lids apart with the stop speculum, I fix the eye with a pair of forceps, and enter the knife about the junction of the middle with the upper third of the cornea, say 2½ lines lower down than the point of incision in von Gräfe's method, and rather more forward in the corneo-sclerotic junction, bringing out the point at a counter-puncture similarly placed; I hold the knife parallel to the iris, and cut upwards about two lines and a half, then turn it forwards, and complete the section by a gentle sawing movement, thus forming a very small elongated flap, situated well back in dense tissue, with sloping sides and transverse centre, which last occupies the summit of the true cornea.

"I argued, and frequently demonstrated, that such a wound would be large enough for the exit of the lens if its posterior lip were gently pressed back and the eyeball manipulated; while, being made in the dense tissue of the corneo-sclerotic junction, it would not gape or be pushed open by protruding vitreous.

[1] This statement, of course, applies only to removals on account of the inflammation, and not for the direct effects of the injury. Where the eyeball was hopelessly destroyed by laceration, I have sometimes removed its remains immediately.

"As a matter of practice, I find it impossible to reflect the linear flap; that the lens emerges much more readily in a line with its vertical axis than when a movement of rotation is necessary to make it present at the wound; that the eye may be safely held until, in the second stage of the operation, a portion of iris is excised and the capsule opened; that the lips of the incision are accurately retained in apposition, and, being situated in vascular tissue, the wound heals much more readily than in the ordinary flap-operation. In operating by this method, I have frequently adopted Mooren's precaution, and excised a piece of iris six weeks previously; latterly, however, I am inclined to consider that there are no advantages connected with a preliminary operation that compensate for its manifest inconvenience, and I have found, in some cases, that, from a want of correspondence between the wound made in extraction and the smaller one used in iridectomy, the iris is more apt to prolapse and be trapped at the corners than if it is excised in proportion to the length of the incision at the time of extraction. In conclusion, I may be permitted to observe that the comparatively larger size and elasticity of the wound in my operation permits the lens to be more readily extruded, without the introduction of instruments, than in von Gräfe's method, while, from its position, the risks from loss of vitreous are very much diminished.

"As to results: since I adopted this method, I have operated upon forty-one cases of cataract in succession, *without selection*, and including many most unfavourable cases, four being upwards of eighty, two eighty-five years of age; of these, forty recovered without a single bad symptom, and one, a most unpromising case, was followed by iritis, closed pupil, and subsequent atrophy of the globe. Thirty-one were cases of extraction by linear flap, two by Schuft's method, and the remainder by Teale's suction method."

36. *Operation for Solution of Senile Cataracts commenced at an early period without allowing the Cataract to ripen.*—Mr. J. Hutchinson states (*Royal London Ophthalmic Hospital Reports*, vol. v. pt. 4) that in a future number of that Journal, he proposes to give a detailed report of a series of cases in which he is now trying needle operations for senile cataracts. The plan is: "1st. To commence the treatment as soon as the opacity is advanced sufficiently to cause serious inconvenience to sight, and thus before the lens has become very hard; 2d. To do very little each time, and to do that little very carefully, so as to avoid any displacement of the lens; 3d. To allow a long interval between the operations; and 4th. To use atropia very thoroughly. In the cases now under treatment, eight in number, I have, as yet, had no drawback whatever. In all, solution is steadily proceeding. The patients have none of them been confined to the house, and none have suffered any material pain. Even if in some it may prove needful to use a spoon to extract the nucleus, still I anticipate advantage from having got rid of the cortical substance beforehand."

MIDWIFERY.

37. *Treatment of Labour Complicated with Ovarian Tumour.*—Dr. W. S. Playfair related to the Royal Med.-Chirurg. Society (May 1, 1867) a case of labour obstructed by ovarian tumour which had come under his observation. The pelvis was occupied by a solid ovarian growth, which was not diminished by puncture, delivery being finally effected by craniotomy. He then proceeded to analyze the details of fifty-seven similar cases, collected from various sources, pointing out the results of the various methods of treatment employed. He showed that nearly one-half of all the cases left to nature had proved fatal, probably on account of the bruising and contusion to which the tumour was necessarily subjected during the passage of the head. On the other hand, all the cases in which the tumour had been diminished in size by puncture recovered; and he strongly advocated this treatment, even when there was

apparently sufficient room to admit of delivery without it. One-half of the cases in which craniotomy was resorted to had also ended fatally. In several of these cases perforation was only employed because the child was dead, although there was sufficient room for the passage of the head; so that the results of this treatment were also most unfavourable for the same reason as when the case was left to nature. Dr. Playfair concluded by briefly reviewing the history of the other methods of treatment employed, such as turning and the Cæsarean section.—*Lancet*, May 26, 1867.

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38. *Cephalotripsy.*—Dr. KIDD, in a communication read before the Dublin Obstetrical Society (Jan. 12, 1867), recommended the adoption of the cephalotribe in all cases of embryotomy in preference to crotchets, hooks, and craniotomy forceps, for the following reasons:—

1st. By its use the base of the skull, the thorax, or pelvis may be completely broken up and reduced to the smallest possible dimensions without injury to the mother.

2d. It holds the part to which it is applied so firmly that it can be rotated if necessary and extracted with ease and safety.

3d. It causes no spiculæ, as the crotchet does, to tear the soft parts of the mother.

4th. It does not, like the crotchet, endanger the mother or the hands of the operator by slipping or perforating the part to which it is applied.

5th. It reduces, for the foregoing reasons, the dangers of embryotomy to a minimum, and allows of its performance in cases where it would not otherwise be possible.—*Dublin Quarterly Journ. Med. Sci.*, Feb. 1867.

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39. *Protracted Gestation.*—Dr. C. JOYNT, of Bombay, records an interesting case of this in a lady 30 years of age, who had been pregnant six times, two of them ending in miscarriage. She often suffered from excessive menstruation with neuralgia of the ovaries, and was also the subject of frequent hystero-epileptic fits.

The data upon which Dr. J. fixes the minimum duration of the prenancy are:—

(*a*). The date of last menstruation, 28th December, 1863, to 2d January, 1864.

(*b*). The occurrence of characteristic morning sickness in January.

(*c*). The perception of the fœtal movements on the 28th of March, and their persistence.

(*d*). The threatened miscarriage in May, after the completion of the calculated fourth month of pregnancy, corresponding to the period at which she actually miscarried on two former occasions.

(*e*). The existence of a well-marked utero-placental murmur, with abdominal enlargement in August; and

(*f*). The occurrence of spurious labour pains in the beginning of October (marking, as I interpret them, the termination of the normal duration of gestation), when the cervix uteri was found obliterated. Any one of these signs taken by itself might be open to objection; but, in the aggregate, they afford evidence as strong as is ever likely to be adduced in proof of protracted gestation. Besides these, however, my case furnishes another fact of importance in fixing the date of conception. My patient was, at the time I speak of, separated from her husband in order that she might be under my immediate care, being only visited by him occasionally. He was absent from the 26th of December to the 6th or 7th of January, when he returned and remained with her till the 10th. Before he again visited her the characteristic morning sickness had satisfied me that pregnancy had already commenced. This definitely fixes the 10th of January as the latest date on which conception could have taken place; so that the minimum duration of pregnancy must have been 317 days, or about six weeks more than the average.—*Dublin Quarterly Journ. of Med. Science*, Nov. 1866.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Pathology and Treatment of Glucosuria and Albuminuria.—[The following note addressed to us by M. CAREY LEA, Esq., contains, it appears to us, some highly important suggestions, and we would invite the attention of our readers to them.]

My Dear Sir: I beg to call your attention to the inclosed article of M. CLAUDE COLLAS in the *Moniteur Scientifique.* M. Collas expresses the opinion that diabetic disease depends upon an incapacity of the system to convert sugar into an insoluble modification. This incapacity he attributes to a deficiency of *phosphate.*[1] His proof he rests on the following observations:—

That during gestation, there is unusual difficulty in healing fractures, owing to the appropriation of every particle of earthy phosphate to the fœtus to form its bone, and at the same time there is a great tendency to glucosuria.

To prove that phosphates have this power, he makes the following experiment. A solution of ordinary diphosphate of soda is made in water containing carbonic acid and is mixed with cane sugar. In a fortnight this mixed solution will be found to be thick and viscous. He therefore recommends the administration of phosphates and phosphoric acid.

The reasoning is certainly ingenious. I have not had time to repeat M. Collas' experiments. My object is simply to call attention to the fact that this principle, if it should prove to be true, is susceptible of immense extension.

In *albuminuria,* a most valuable constituent of the system is wasted through the urine. If M. Collas's reasoning is true with respect to the waste of sugar, by parity of argument, it seems probable that the loss of albumen may arise from the absence of fixing principles, and this would immediately sugest the administration of remedies capable of coagulating albumen, such as mineral acids, alkaline nitrates, &c. In fact the number is so extensive that the only difficulty would seem to be in the selection.

Dr. I. HAYS. Very truly, yours, M. CAREY LEA.

PHILADELPHIA, April 26, 1867.

[1] M. Collas, in the article referred to by Mr. Lea, calls attention to the facts demonstrated by M. Claude Bernard, that sugar is formed in the system in health, and that this substance is necessary for nutrition. But M. C. remarks the substances required for the nutrition of our organs reach them in a soluble condition, and that the agent which renders them fixed is still unknown. M. C. thinks that this agent is the phosphate of lime which has the property of converting sugar into glucose, which is almost insoluble, and that it is that agent which precipitates and fixes the sugar in the organs. This, he thinks, explains the phases of glucosuria. The natural sugar, instead of fulfilling its function, is eliminated by the kidneys in greater or less quantity, according to the severity of the disease. It is then not the sugar which is injurious, for it is eliminated, but the evil arises from the deficiency of phosphates, and, consequently, the organs being no longer nourished, the system suffers and death ensues. On this account M. Collas reprobates the regimen usually prescribed for diabetics, the forbidding them wheat bread. This privation is useless, and is with difficulty endured by patients, deranges nutrition and retards a cure.

Pyæmia? Consecutive to a Gunshot Wound which had healed Sixteen Months previously, resulting in Death. By S. J. RADCLIFFE, A. M., M. D., of Washington, D. C.

Martin Armstrong, First Sergeant, Company "M," Sixth U. S. Cavalry, received a gunshot flesh wound of the left thigh in action near Williamsburg, Va., by a musket-ball, May 4th, 1862. The ball entered at the upper third external aspect, passing backwards and downwards, and emerged about the middle of middle third, posteriorly. He was sent to the U. S. A. General Hospital at Fortress Monroe, Old Point Comfort, Va., remaining there ten weeks, when he was returned to his regiment entirely recovered. He went through the whole of the several arduous campaigns to the battle of Gettysburg, Pa., without the least inconvenience from his wound; was taken prisoner at Fairfield, Md., July 3d, 1863, taken to Richmond and Belle Island, by way of Staunton, Va., on foot, arriving at Belle Island July 20th, at which place he was paroled on the 22d, left the enemy's lines 23d, arrived at Annapolis, Md., and College Green Barracks 25th, Camp Parole Aug. 2d, and admitted to the U. S. A. General Hospital, Div. No. 1, Sept. 20th following.

On admission, he gave me the above history of himself, and added he had had good health up to the day previous, when he was attacked with a severe chill followed by a burning fever, and great lancinating pain at the seat of his former wound in the thigh. His skin was hot, pulse 95 to 100, respiration about 30, eyes turgid, tongue furred, bowels inclined to be loose, yellow hue of the surface and conjunctiva, and he complained of great pain posteriorly between the eschars over the orifices of entrance and exit of his wound, or more properly in the course of the great sciatic nerve. His thigh was not swollen, exhibited no evidences of local inflammation, cicatrices were strong and firm, but the parts were a little tender on pressure. As there were a number admitted about that time with the various forms of malarial fever, with biliary complications similating this, I ordered quiniæ sulph. gr. iss. pil. hydrarg. gr. ½, and capsicum gr. ½, to be given him every four hours; a blister 3×3 to be put over seat of pain; pulv. Doveri gr. viiss at night, if he did not sleep; and to have moderate diet for the next twenty-four hours.

Sept. 21. But little change. Quiniæ sulph. gr. iiss in solution was substituted for the pills.

On the third day of admission the thigh began to swell, the pain continuing, and the fever to assume a low form, with dry tongue, accelerated pulse, looseness of bowels, prone to diarrhœa, and considerable nervous prostration. The quinia was continued, with the addition of 30 drops of spt. æther. nit., every second dose, tinct. krameria ʒj in mist. creta ℥ss after each stool. Fomentations of hot water to be applied to the thigh, and beef-tea and wine-whey, one ounce each, to be administered alternately every hour.

27*th.* Eighth day of admission the general symptoms had somewhat subsided—the pulse was down to 90, from a variation of from 110 to 120; respiration 20 to 25, from 30 to 35; bowels more easily controlled; tongue moister; but the thigh was largely tumefied, and very painful—an abscess forming between the two cicatrices posteriorly. The quinia, chalk mixture, and krameria were continued, with a substitution of whiskey for the whey, about a half an ounce, every hour; beef-tea, eggs, and nourishing diet to be continued; and a large flaxseed poultice to envelop the entire circumference of the thigh, to be repeated as soon as it became cold.

Oct. 1. Up to this date the thigh continued to swell gradually day by day, accompanied by a sharp, throbbing pain, the abscess pointing at two places, externally near the former orifice of entrance and at point of exit of ball. His eyes had a sombre hue, some hectic flush on both cheeks, pulse 110, respiration 45, tongue dry and some sordes about teeth and gums, bowels loose; made a deep incision through the eschar marking the point of exit of the ball—this being the most dependent part—from which issued in a full stream about two pints of highly-offensive, dark, grayish, ichorous matter. I examined the wound thoroughly, but could discover no foreign substance. I ordered the parts to be well cleaned, to be washed with dilute solution of chlor. soda, and powdered charcoal to be sprinkled over the poultices—which were to be continued—the other remedies, the krameria in mucilage acacia, and the diet and stimulants to be given as before.

2*d.* Said he felt much better; had a better and quieter night. Tongue still furred but moister, pulse quick and feeble, respiration hurried, bowels better, and skin in good condition. Abscess still discharged the same offensive, thin, dark, ichorous matter, like that from some forms of gangrene. Quinia gr. iiss, in solution with ammon. carb. gr. v in emulsion, to be given every alternate two hours; whiskey and beef-tea as before. Every hour abscess to be injected with solution permanganate of potas. and poultice continued.

3*d.* Very feeble and pale. Quite delirious during the night, had two stools, and was troubled some with nausea—pulse quick and sharp, breathing hurried, condition of patient much worse. Ordered one ounce beef-tea and two ounces milk punch, alternately each half hour, and of tinct. ferri chlor. ℥j et quinia sulph. ℥ss, 25 drops every 4 hours—charcoal poultices to be continued to the thigh. 3 P. M. Pupils contracted; in a comatose condition, from which he could scarcely be aroused; did not answer questions; pulse 112, sharp and small; respiration difficult; bowels moved involuntarily; very sensitive to touch; cried out and struck at random if his thigh was at all manipulated; thigh largely infiltrated down to the knee, which was red, but little discharge from abscess; discharge still thin, gangrenous, and bad smelling; refused everything offered him; took no medicine, stimulants, or diet—spit it out madly, though seemingly semi-unconscious. Acid. tannic. and quinia injection to control bowels. 7½ P. M. Sinking rapidly, lids half closed, pupils contracted and insensible to bright light held close to the eyes, considerable dyspnœa.

4*th.* Continued to fail through the night, and died quietly at 5½ A. M. No post-mortem examination was had.

It has always been a query with me whether this was a case of pyæmia from absorption of poisonous matter, the abscess from which it originated being contiguous to the larger absorbents and favouring such a result, or a case of localized typhoid fever, if I may be allowed such an expression, the conditions peculiar to which, falling with unequal force upon this weak point. Certainly the exhausting discharges, with the depressed condition of the patient, had much to do towards bringing about the fatal result.

Wound of Loins by a Shell, with Fracture of Spinous Process of Second and Third Lumbar Vertebræ; Recovery. By PHILIP S. WALES, M. D., Surg. U. S. N.

J. F. Otas, 28, born in New York, admitted into the Naval Hospital at Pilot Town, August 8th, with a severe shell wound of loins. He was

standing near his gun while passing the enemy's batteries in a gun-boat, with his cartridge-box and pistol fastened around him with a strong broad belt. A rifle shell struck these obliquely, carrying them away, as well as a portion of the integuments and muscles in the lumbar region the size of his two hands. The shock was severe, and the pain excruciating. He vomited freely, and could only lay upon the bed prone. The spinous processes of the second, third, and fourth lumbar vertebræ were fractured through their laminæ; were denuded and freely movable. There was no paralysis, but a slight sluggishness in the movements of the lower extremities. The bladder was paralyzed, and required the urine to be drawn off; the bedclothes were kept damp by this fluid dribbling away during the night. Water dressings were applied until all inflammatory action was controlled, then simple dressings were resorted to, under which treatment the wound cicatrized and the spinous processes became consolidated in seven or eight weeks.

I saw the patient a year afterwards, and then he was inconvenienced by dribbling of urine, but was gradually improving; his general health was better. The functions of the muscles of the legs were also being gradually re-established.

Puerperal Convulsions treated by Bromide of Potassium. By CHAS. C. SHOYER, M. D., of Leavenworth, Kansas.

Mrs. H., aged 18, primipara, consulted me, April 30th, for a severe pain in what I first mistook for the fundus of the uterus, and supposed labour had set in; I could not reach the os uteri, and promised to call again in three hours; on my return she still complained of pain at the same place, and that it was more violent; I now questioned her more closely, and finding, the os still out of reach, diagnosticated gastric pain, and ordered: ℞.—Sp. lavand. co. ℥j, morphia sul. gr. j.—M. S.—Teaspoonful hourly till relieved; two doses quelled the pain. In the night she vomited and had two stools from a half ounce ol. ricini; she also had a morbidly craving appetite, and ate largely of meat, bread, etc., all night long, and on the morning of the 1st of May, at 7 A. M., got up for the purpose of again eating, and fell to the floor fainting; upon being placed in bed she had a series of violent convulsions. I reached her at 8 A. M. and found her strongly convulsed; breathing stertorously; pupils insensible to light; teeth firmly fixed, and frothing at the mouth. I at once administered ol. tiglii two drops, and gave in all five drops in an hour; it had no effect whatever. Chloroform being now at hand I caused her to inhale it, which at once stopped the convulsions, but upon withdrawing it convulsions recurred. Having ascertained the death of the child, by auscultation and palpation, I punctured the membranes, through a speculum, with an ordinary pocket probe, fastened in a common spring forceps. In a short time she commenced vomiting, which was assisted by emetics; throwing up large quantities of pieces of meat, bread, etc., showing the food to have been swallowed without being masticated. She became quiet for a short time only, and I then administered the following dose: ℞.—Hyd. chlor. mit. gr. xv, podophyllin gr. j, to be followed in three hours by magnes. sulph. ℥ss. This occasioned three large passages, which were voided into the bed, the patient being unconscious. I may here say, that these medicines were given at such times as we could get her to swallow. Cold was applied to the head, and sinapisms to the extremities. Dr. Carpenter now met me in consultation. After the operation of the cathartic there was a cessation of the convulsions for nearly three hours, but the pains of labour setting in

at about 5 P. M., she again became convulsed, and had several in rapid succession. We had thus far emptied the stomach and bowels, ruptured the membranes, and administered chloroform, and all without avail. The chloroform acted well so long as it was inhaled, but as we could not obtain a trustworthy person to administer it in our absence, we determined to give bromide of potassium in fifteen grain doses hourly, and be governed by its effects; we reasoned from its effects in epilepsy and other nervous affections. From the time of its first administration to the termination of parturition, a period of 21½ hours, she never had another convulsion, nor has she since. The bromide was given five hours in succession, or about seventy-five grains; allowing some to have been wasted, she got fully ℥j. Being now quiet and somnolent (the stertor having ceased), the intervals were lengthened, and it was only given to allay restlessness. On the morning of the 2d, I found she could be aroused; pulse 85; sensible to the pain of labour which was now advancing slowly; would answer questions in monosyllables, but evidently did not like to be disturbed; os dilating; there was considerable anæsthesia. Bromide was now given every four hours and discontinued at 12½ P. M.; child was born at 2½ P. M. It was eighteen inches long, and the epidermis was peeling; should judge it to have been 8½ months old; placenta came away and uterus contracted as in a natural labour. She took in all ℥ijss bromide of potassium from 5 P. M. May 1st, to 12½ P. M. May 2d, a period of nineteen and a half hours. She remained soporose until the morning of the 3d, and then awakened as from a prolonged sleep, and remembered nothing of the past, not even that she had had a child. I could obtain none of her urine until thirty hours after her confinement; it contained no albumen, but she complained of vertigo and other cerebral symptoms, with œdema of feet and legs, before sending for me. This is, so far as I know, the *first* case of puerperal convulsions treated by the bromide of potassium, and I ask for it a more extended trial; should such another case present itself, I would not induce premature labour, but exhibit the remedy at once.

Citric Acid in Metritis. By CHARLES W. OLESON, M.D., of Bloomingdale, Ill.

Mrs. M. K., primipara, was delivered, May 2d, after a slow but unassisted labour, of a healthy male child.

Several days previous to her confinement, I had been summoned on account of severe lancinating pains, situated in right iliac region and extending into hip. These pains were speedily relieved by a few doses of the compound ipecac. powders. After the accouchement, beyond slight strangury, which was relieved by the application of cloths wrung out of warm water to the vulva, she did well until the evening of the fifth day, when the pain reappeared, but of a more severe nature and extending over the entire hypogastrium. The tongue soon became covered with a white, pasty coat, the pulse ranged from 120 to 130, the lochia was suppressed, the stools were frequent and thin, the appetite lost, the womb became exquisitely tender when touched, and the patient tossed in bed vainly seeking by change of position to relieve her distress. I ordered a warm epithem of hops and camphor, to be renewed every two hours, and gave half a teaspoonful of castor oil. The cathartic expelled some hardened feces, after which the discharges became less frequent and of better consistency. I also gave two drops of fluid ext. of verat. viride every three hours, and to procure rest and relieve pain half a grain of sulph. morph. and 6 grains

of bromide potassium every two hours. Nevertheless the pain continued, with but short intervals of rest, for two days, and the patient had by this time become exhausted, and there was yet no apparent prospect of a cessation of the pain. At this juncture, I concluded to make a trial of citric acid, in regard to the efficacy of which to relieve pain I had previously satisfied myself in a patient with scirrhus of the left mamma. I gave ℞.—Acid. citric. ʒij; Aqua, ℥iv.—M. Sig.—Teaspoonful every two hours. At my next visit, I was informed that relief followed the first dose, and that, save some slight twinges, no pain had since been felt. The fever ceased, the tongue speedily became clean, the appetite and lochia returned, and, what was most gratifying, there was no return of the pain, though the womb remained tender for several days. With tr. ferri chlor. and quinia as a tonic and the substitution of fresh lemons as more palatable than the mixture, the patient rapidly convalesced, and is now engaged in her household duties. Since then, I have used the acid in severe after-pains, and have been highly pleased with the prompt alleviation of distress that it affords.

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A Case of Voluntary Self-Emasculation. Reported by D. N. RANKIN, M.D., Physician to Western Penitentiary of Pennsylvania.

W. J. D., aged 23 years, a prisoner in the Western Penitentiary of Pennsylvania, deserted from the rebel army in January, 1863, in West Virginia, and afterwards enlisted in the United States army, remaining there until May of the same year, when he deserted from it also, and made his way to Columbus, Ohio. Soon afterwards he passed over into Pennsylvania, and wandered about, through the mountainous regions of that State, until he incidentally met with a suitable accomplice, who was equally depraved in character, and as willing to undertake anything ever so reckless and criminal, providing it would lead to the acquisition of money. They arrived at Pittsburg on the 3d of December, 1863, and, on the next night, broke into and robbed the post office at West Brownsville, Pa., a village in the neighbourhood of Pittsburg, in which act he was captured, but his companion in guilt, unfortunately for the community, escaped. He was tried, convicted, and sentenced to hard labour and solitary confinement in the Western Penitentiary for the term of ten years.

During the early part of his confinement, he seemed to endure his punishment as well as the generality of the prisoners do, until May 6th, 1866, at which period I received an urgent summons to hasten to the prison to see a man who had attempted to commit suicide. On my arrival I found that, by means of the knife with which he had been in the habit of cutting his meat and bread, Davids had, after sharpening it on the stone floor, deliberately removed both his testicles.

When asked what motive had induced him to such a barbarous act, he said that for some considerable time he had been terribly tormented, during his sleeping hours, with such annoying, lascivious dreams, that at length they had become insupportable, and supposing the testicles were the cause of all this trouble, he had determined to rid himself of the offending organs. After having thus made up his mind, he fixed upon the approaching Sunday for carrying into effect his resolution. When the time arrived, and he had made the proper preparation for the operation, by sharpening his knife, he commenced by making one cut that penetrated merely through the integuments of the scrotum, when, his courage failing, he postponed the operation to the next Sunday, but on this day his fortitude was insuffi-

cient to enable him to do any better than on the first attempt, when he determined to defer the farther prosecution of the operation to the next Sunday. When that day arrived, he determined that on that day he would succeed in his object, if it should cost him his life. So, on Sunday afternoon, May 6, 1866, after the necessary preparations, he made a sweeping incision, antero-posteriorly, parallel with the raphé of the scrotum, and immediately over the right testicle, extending about two and a half inches in length, and completely exposing that organ to view, then, after drawing it down a little distance, he severed the spermatic cord, thus detaching the testicle entirely, which he carried to the water-closet, ten feet distant, and threw it into that receptacle. After the cutting of the cord, there was considerable hemorrhage from the spermatic artery, to check which he obtained a thread by ripping a seam in one of the legs of his pantaloons, with which he successfully ligated the bleeding artery, and then used cold water to check the venous hemorrhage.

Having thus succeeded so well in the removal of the right, he at once engaged in extirpating the left testicle, and as equally well succeeded in removing it also.

On my arrival at his cell, he presented a most pitiable appearance, and at once addressed me, by observing, "Well, doctor, I have done it;" and, throwing off the blanket with which he was covered, he exhibited to view the whole extent of the inhuman act. There were two incisions in the scrotum parallel to each other, antero-posteriorly, about two and a half inches in length, as neatly made as if done by the most expert surgeon.

The bloody knife and the blanket, saturated with blood, were the only objects more than ordinary observable around his cell.

I carefully washed the wounds, and, having brought the ends of the ligatures out at the lower part of the incisions, brought together their edges, with three sutures to each incision, and supported them with a sufficient number of adhesive straps, taking care to leave the inferior ends of the incisions a little open for the escape of the discharges. The parts were then supported by a compress and T bandage. As a dressing nothing but cold water was used.

On the eighth day the sutures were removed, and in about three weeks after the performance of the operation he was able to perform his allotted task as a shoemaker in the prison.

This man, previous to his imprisonment, had been a desperate character, and had spent the greater part of nine years of his time, before the war commenced, in roving about through Texas, Mexico, and Arkansas. He is extremely ignorant, unable to read or write, and may be considered a perfect specimen of a Mexican bandit.

At the present time, January, 1867, he is in excellent health, with the exception that he is considerably troubled with obesity; but says he is now much better contented than formerly to remain within the walls of his solitary cell, where he sees no person except the officers of the prison.

Excision of Fibro-malignant Tumour from Right Side of Neck. By J. F. Shaffner, M.D., Salem, N. C.

In October, 1865, Mr. B., æt. 60, consulted me in reference to a large tumour, extending from behind the right ear downwards towards the clavicle, which had made its appearance some fifty years before. When first observed, it was about the size of a pea, and had been gradually increasing ever since, and always free from pain. It was pronounced to be fibrous,

and not probable to result in anything more serious than inconvenience from bulk and compression of adjacent parts.

During the preceding summer, the surface became inflamed, speedily followed by ulceration and sharp, lancinating pain, and the general health began to fail. This was his condition when he first consulted me. After reflection, I became convinced that excision presented the only remedy.

Three months later, he again called. During the interval ulceration had made rapid progress, the mass had become gangrenous, and exceedingly offensive. The general health had suffered correspondingly, and it was plain that the patient must have speedy relief or sink from exhaustion.

Excision was again suggested, with a candid statement of the great danger which would attend it.

On Friday, 23d February, 1866, the patient presented himself for operation. Assisted by Dr. Theod. Keehler, of this place, the patient was placed under the influence of chloroform and the operation commenced. In order to command the whole tumour, free elliptical incisions were made; the first from lobule of the ear to the clavicle, with a second extending from behind the ear to the lower end of the first. The cutaneous flaps were reverted over the tumour, while the ear, by its lobule, was drawn strongly upwards and backwards by an assistant to avoid injury during the subsequent steps of the operation. Its cellular connections were detached with the handle of scapel, to obviate injury, as far as possible, to important bloodvessels and nerves. The external jugular vein passed directly through the mass, and after ligation was divided. The hemorrhage resulting from the division of the numerous enlarged bloodvessels required the application of upwards of twenty ligatures, which occupied much time. Fortunately, there was neither involvement of parotid gland nor carotid artery. The sheath inclosing the latter was detected immediately behind the tumour. Compression upon the submaxillary gland had induced marked hypertrophy, yet it was soft, and apparently free from involvement. The whole mass being detached, measured, in its long and short diameters, seven by five inches, and weighed two and a half pounds.

Consciousness having returned, the patient was placed in bed and a full anodyne administered. In a few days healthy suppuration was established, the ligatures separated in due time, and the wound closed by granulation.

Three weeks after the operation, Mr. B. returned home, to all appearances well. A farmer by occupation, he laboured hard during the spring and summer, and frequently declared that he "never felt better in his life." Six months after the operation, he died from an affection of the liver, which his attending physician pronounced carcinoma.

The tumour, now before me, preserved in alcohol, presents all the characters of a fibrous tumour. Its shape is globular—the surface is nodulated—its structure dense and inelastic. A degeneration into the malignant, evidently induced the ulceration, the fetor, the pain, and urgent constitutional disturbance, and, still more, the final hepatic involvement.

Report of a Case of Vesico-Vaginal Fistula. By CLARKSON FREEMAN, Esq., M.D., of Milton, Canada West. (Before the Halton Medical Association, January 22d, 1867.)

The following successful case of operation for vesico-vaginal fistula occurred in my practice last summer (1866). The history of the case, as related by the patient, is as follows:—

Mrs. J. McL., æt. 27, was taken ill on the 29th of July (1864) with

severe labour-pains in her fourth confinement, which continued the whole day until 8 o'clock A.M. of the 30th, when the waters broke and came away in large quantity, after which the pains subsided until about noon the 1st of August, when severe bearing-down pains, without a moment's intermission, occurred, and from that time was unable to urinate, although having the most intense inclination to do so. At 2 o'clock P.M. on the 2d, the medical attendants stated, after they had in vain attempted to introduce a catheter, that there was a bag of waters on the head of the child, which it was necessary to open in order to allow the child to be born. Assent being given, they made a puncture with a pair of scissors, from whence flowed a pot full of bloody water, which immediately relieved the wish to urinate. The urine came away incessantly scalding, so that the suffering was almost beyond endurance. She was unable to leave her bed for more than three months after confinement.

On Examination.—There was found a circular opening four lines in front of the anterior lip of the os uteri, which permitted the introduction of the largest sized catheter into the bladder, there was also a harder cicatrix extending from it towards the bladder.

Treatment.—For a few months I used caustic applications and cold astringent injections without success. On the 9th of May, with the kind assistance of several of my medical brethren, I pared the edges of the fistula and passed two silver and four annealed wire sutures through it and continued the use of the catheter in the bladder, which appeared to do well until about three weeks, when she observed the urine escaping again per vaginam. I then ascertained that the opening had been reduced more than one half. I then again pared the edges and brought them together by four annealed wire sutures and applied a pair of long delicate bullet forceps to retain the vivified portion of the fistula in perfect apposition, which had a most happy effect in producing partial prolapsus and thus very materially facilitating the introduction of two more stitches, which were necessary in consequence of the others being disengaged too soon. These two remained ten days—about the same time as the first—with a successful result. I would recommend the annealed wire from its easy application and less liability to break, than the silver.

Extirpation of Nail of Thumb under Anæsthesia by Cold. By JOHN PARSONS, M.D., of Mount Pleasant, Kansas.

Local anæsthesia, as is well known, can be produced by snow or ice and salt, and minor operations performed, without pain, as in the following case of onychia.

Mrs. B., who had been treated by charlatans with salves, &c., for the past four months without any benefit, lately applied for treatment, and I decided to remove the partly detached nail of the right thumb. As she dreaded the pain of the operation, and also taking chloroform and ether, I concluded to try *freezing* with snow and salt. In two minutes, the thumb being insensible to pain, I quickly extirpated the nail. The thumb was then thawed in water and then simply dressed. Seven days after the operation, it was healing rapidly, and a new nail had appeared.

Anencephalic Monster.—By A. A. MOORE, M. D., Camden, S. C.

I was summoned, April 10th, 1866, at 11 o'clock at night, to a coloured woman, aged 25 years, in her second labour, the first had been natural. The patient thought she had had labour pains since the morning of the 8th

inst. Her breathing was short, pulse feeble and frequent, pain almost incessant at the fundus of the uterus, the membranes very much *distended*, and the *os uteri* pretty well *dilated*. Waited until about 3 o'clock next morning, when there being no further progress in the labour, and the *os* being *fully dilated*, I ruptured the amniotic sac after a little manipulation. A very copious flow of water followed, after which I found the *left ear* of the child at the *symphysis pubis*, and the *right ear* of course towards the *sacrum*. The child was born in a few minutes, the head being delivered in the above position, and *without rotation*.

The child (a female) was an *Anencephalus*. The whole of the occipital bone except the basilar process, the whole of both parietal bones, and the frontal bone down to the superciliary ridges were *absent*. The mastoid portions of both temporal bones were *present*. The eyebrows, eyes, nose, mouth, chin, and both ears were *perfectly formed*. The child was healthy looking, and fully formed in every respect with the exception of the *imperfect ossification of its cranium*, and the *absence of any discoverable vestige of a brain*.

Malformation of the Genital Organs.—Reported by T. H. BARTON, M. D., of Syracuse, Ohio.

On the 7th of September, 1864, I was called to see a child, which presented the following deformities. The penis was cleft at about its middle part. The largest cleft was perforate so as to admit a common sized probe about one inch; the smaller one was imperforate, and both completely denuded of integument. The scrotum appeared like two fleshy excrescences without integument. I could not find any testicles. Immediately below the fleshy excrescence of the scrotum was a well-developed labia majora, which ended in a complete cul-de-sac. Without any appearance of a vagina.

The anal orifice was completely covered over with natural integument, as was also the labia majora. Immediately below the umbilicus was a space about three or four inches in diameter denuded of integument. A hernia was also protruding covered with the peritoneum and abdominal muscles. In the right inguinal region there was a space about three inches in diameter denuded of integument, with the appearance of a large inguinal hernia. The urine was evacuated through an orifice in the right inguinal region. In other respects the child seemed to be healthy. I think it died seven or eight days from birth. There was no autopsy.

DOMESTIC SUMMARY.

Relation of Heat to Mental Work.—Dr. J. S. LOMBARD, Assistant Professor of Physics in Harvard University, has published (*New York Medical Journal*, June, 1867) some curious and interesting experiments on this subject. The experiments were all made upon himself.

"The object of the first series of investigations was to study the temperature of the head, while sitting quietly by himself, with no special mental occupation.

"Under these circumstances, it was found that while the temperature of the head was in some instances quite steady, in others it was very variable, rising and falling, often with great rapidity. The variations were slight, not amounting, as a rule, to more than a hundredth of a degree of Centigrade; but still they were very marked, if some other portion of the body was taken as a stand-

ard of comparison; thus the temperature of the leg or arm varied, if at all, within much narrower limits.

"What the exact cause of these irregularities was, could not be determined with certainty; but the conclusion arrived at from a great many observations was, that this variability of temperature was connected with certain conditions of the mind. It was found that, in those cases in which the temperature was steady, the mind was, as a rule, in a more or less torpid state, such as persons are apt to fall into after a hearty meal; while in the cases in which variability of temperature existed, the mental condition was one of much greater activity. The effect of a transition from the former to the latter condition was frequently shown, under the following circumstances:—

"It often happened, when the mind was in the state of inactivity mentioned, that one or more persons would enter the room in which the observer was seated, and a short conversation ensue. The subjects of conversation were of no particular interest, and required no reflection; but nevertheless, in a few moments the temperature, which had previously been steady, would begin to vary, rising and falling, but with a general upward tendency.

"This change was not due to the muscular exertion of talking, for it manifested itself when the observer took no part in the conversation; merely listening to the words of others, and saying nothing himself. Nor was it owing to any effect produced upon the circulation by modification of the action of the heart, for in this case other portions of the body would have been influenced likewise, whereas it was found that the head alone was affected, other parts situated full as favourably, if not more so, for feeling any such influence, exhibiting little or no change of temperature. Whatever the cause was, it certainly appeared to have its seat in the head.[1]

"Pursuing these experiments farther, it was found that *anything that aroused the attention* was capable of causing a greater or less rise of temperature on the part of the head, over and above that of the rest of the body. Various sights and sounds had this effect; and, indeed, it could be produced in a great variety of ways.

"In the next place, the effect of the exercise of the higher reasoning powers was investigated. The results of these experiments were as follows:—

"*First.* Mental action of this sort caused a rise of temperature on the part of the head, which varied very much in different cases; the highest rise noticed did not exceed the twentieth of a degree.[2]

"*Second.* The temperature of the extremities fell, sometimes only slightly, but at other times very decidedly—a half or a quarter of a degree of Centigrade, for example. This fall was doubtless owing, in part, to the absence of muscular exertion consequent upon sitting still; but not entirely so, for mere immobility, without mental exertion, did not produce an equally great effect.

"A large number of observations were also made upon the effect of the reading of different literary productions. Provided the work did not particularly excite the interest or arouse the emotions of the reader, either no effect at all was produced, or else the temperature was slightly depressed. But with productions of an opposite description a very different result was obtained. In these cases the temperature was very speedily and visibly elevated.

"The most striking effects of all were produced by the reading aloud, or the recitation of poetry. The rise of temperature in this case was not due in any appreciable degree to the muscular exertion involved, for mere mechanical recitation produced no effect; but the moment the interest of the speaker began to be awakened, the temperature rose.

"Although the action of the heart was frequently more or less modified, yet this could not account for the rise of temperature, inasmuch as other parts of the body ought, in such a case, to have shared equally in the rise, whereas it

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[1] It is almost needless to say that, in all these experiments, changes of position, or any other disturbing cause, were carefully avoided.

[2] With delicate thermo-electric apparatus it is impossible to estimate accurately the thermometric values of the variations observed; the most that can be done is to make an approximation.

was the head that was chiefly, if not solely, affected. Reading or reciting to one's self gave similar results, and often even in a more marked degree.[1]

"The rise of temperature in this series of experiments was the highest noticed in all the observations given in this article; a few minutes' recitation producing a greater effect than several hours of deep thought.

"In conclusion, I would say that, as regards the particular regions of the head in which the elevation of temperature was most marked, it was generally found that the best results were obtained just above the occipital protuberance. This statement applies to all the experiments that have been related. In the last-mentioned series of observations it was not unfrequently found that the temperature of the forehead *fell*, while that of the back of the head *rose;* but for what reason I have not yet been able to determine."

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Two Attacks of Measles within Six Weeks in the same Patient.—Dr. MINOT reported to the Boston Society for Medical Improvement the following case of this: A little boy, three years old, sickened December 21st. An eruption, supposed to be that of measles, appeared on the 25th. The diagnosis was, however, at first a little doubtful, as the eruption was complicated by urticaria for two days. After this time it had a perfectly normal appearance; moreover, the child had the catarrh, and other general symptoms of measles. A companion who saw him early in the disease, was attacked with measles exactly a fortnight afterwards. A sister of the first patient, four years old, and a young lady visiting in the family, also caught the disease, at intervals of a few weeks, the symptoms and appearances in each being perfectly characteristic. On Feb. 3d, after a few days' indisposition, the eruption reappeared on the first patient, and went through its course in the usual manner, being accompanied by the catarrh and other symptoms of measles. The interval between the two attacks was six weeks. Singularly enough, of the three individuals who caught the disease from this patient, two, the young lady and the little boy (her brother), had had the disease before.—*Boston Med. and Surg. Jl.*, May 9,1867.

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Ear Douche.—Dr. EDW. H. CLARKE describes (*Boston Med. and Surg. Journ.*, May 30, 1867) an instrument for cleansing the ear, which he thinks preferable to the syringe. "It consists of a glass jar, of the capacity of about a pint, and of a flexible tube three feet long. One end of the tube is attached to the jar, and the other end is furnished with a nozzle appropriate for the ear. By elevating the jar to a greater or less height, a continued stream of water is poured into the meatus with sufficient force to cleanse it thoroughly, and to do so without pain to the patient. I have used this instrument for the purpose of cleansing the ear in a large number of cases, and am satisfied with its action."

An instrument, acting on the same principle, has been used for some years for administering injections per rectum.

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Deep Cervical Tumour, the removal of which involved the exsection of a portion of the internal Jugular Vein.—Dr. W. W. GREENE, Prof. Surgery in Barkshire Med. College, relates (*The Medical Record*, June 15, 1867) a case of this. The tumour was about the size of a croquet ball, on the left side of the neck, and the seat of almost constant pain. The internal jugular vein was found so firmly adherent to the sac that in the careful attempts to liberate it with the finger and handle of the scalpel, the vessel ruptured and there was an alarming gush of venous blood. A ligature was at once applied to the cardiac side, and the hemorrhage from the other being controlled by pressure, the vein was then carefully isolated, a portion two and a half inches excised, and a ligature applied to the distal side.

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[1] The success of these experiments must depend, in a great measure, upon individual peculiarity; and with many persons they would doubtless fail. *Real emotion* must be awakened to produce the rise of temperature. Where this condition of the mind existed, out of more than a hundred observations, I have never known a failure.

Dr. G. states that he was taught to believe that the ligation of veins was a hazardous procedure, but he has not found it to be so. He has now ligated the internal jugular vein four times, the femoral vein six times, and other veins several times, without the results he had been taught to fear.

This statement tends to sustain the results, so far as the experience of a single individual can do so, the conclusions arrived at by Dr. S. W. Gross, from his extended and laborious researches, published in the numbers of this Journal for January and April last. As Dr. G. does not seem to be acquainted with that exhaustive paper, we would take the liberty of recommending it to his attention.

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Median Lithotomy.—Dr. Thomas M. Markoe, Surgeon to New York Hospital, strongly commends (*New York Med. Jour.*, April, 1867) the Median, or "Allerton's operation" for stone; and says, that from a trial of it in twelve cases, he is its warm advocate. He reports, in addition to his own twelve cases, eleven contributed by his friends in which the operation was successfully performed.

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Anterior Dislocation of the Elbow-Joint without Fracture of Olecranon successfully reduced.—A case of this rare dislocation is related (*Chicago Medical Journal*, June, 1867) by Dr. R. P. Hunt. The subject of this case was Lieut.-Col. Henry Clay, Jr. The unfractured olecranon and the depression in the rear of the humerus were distinctly felt. There was no fracture of the olecranon. Dr. H. tried to reduce this dislocation by direct traction, without avail; then he flexed the forearm upon the arm, changed the extension to near the elbow-joint, repeated the traction, and suddenly, at the proper time, stopped the traction, by extending the forearm, the luxation was reduced. A roller bandage, and a dose of morphia to procure ease and sleep, were all that was done. Col. Clay was about in a few days, gradually improving the use of his elbow from time to time. He was killed in battle at Buena Vista, gallantly fighting under the flag he had sworn to defend."

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Abscess in the Appendix Vermiformis; Incision; Recovery.—A case of this, in a girl 15 years of age, is reported by Dr. J. H. B. Burge. Prof. W. Parker, being called in consultation, advised incision. Accordingly, the patient having been put under the influence of chloroform by Dr. B., Prof. P. made an incision "three inches in length, directly over the tumour, its central portion extending through the muscles and the fasciæ transversales. An exploring needle was thrust into the tumour, and at first there seemed to threaten a pretty copious hemorrhage. It proved, however, to be mainly serum, and pus immediately followed. The wound was enlarged, a piece of lint introduced, and slippery-elm poultice applied. After consciousness returned, sol. morph. (Magendie's) gtt. x was given. Patient slept quietly for more than two-thirds of the time for the next thirty-six hours, generally two or three hours at a time. Has not cared for food since first attacked. Takes a little milk-punch, toast, and crackers.

"*March* 22. Pulse, since operation, very uniformly 100; to-day, 112. Skin and tongue moist; no pain, no thirst. Has taken no medicine since the day of the operation. Abscess continues to discharge moderately, and incision looks healthy."

The report, April 10, is: "Bowels quite regular; wound nearly healed; appetite good; patient gaining strength rapidly."

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Ligature of the Subclavian Artery.—Prof. Willard Parker reports (*Medical Record*, May 1, 1867) five cases of ligature of subclavian artery, for axillary and subclavian aneurism. Of these, three were successful and two terminated fatally.

—

Spondylisthesis causing Difficult Labour.—Dr. James Blake, Professor of Midwifery in Toland Medical College, San Francisco, relates (*Pacific Medical and Surgical Journal*, Feb. 1867) the following interesting case of this:—

Mrs. H., æt. 26, always enjoyed good health, and now healthy, with no external signs of deformity; the spine, however, shows a deep depression opposite

the lower lumbar vertebræ, most marked at the fifth. Married at the age of fifteen, and has had six children, and one abortion at four months. Is now advanced to the seventh month of the eighth pregnancy. The two first children were born alive after tedious labours, but the four last have been stillborn on account of difficult labours. She states that when she was married her weight was 101 pounds, but during her first pregnancy she gained rapidly in weight, weighing 199 pounds at the birth of her first child. She now weighs 220 pounds, and is apparently in perfect health, and active. Dr. B. attended her in labour, in consultation, about a twelvemonth ago, and then, owing to the extreme difficulty we had in delivering her, on account of the distortion of the brim of the pelvis, it was determined, should pregnancy again occur, to bring on labour at the seventh month, as affording the only chance for a living child being born. The deformity was caused by the displacement forwards and downwards of the last lumbar vertebra which overhangs the promontory of the sacrum, contracting the antero-posterior diameter of the inlet to about three and a half inches, and considerably altering the direction of its axis. The true pelvis was normal and capacious.

"*June* 7. A small-sized Barnes dilator was introduced into the uterus and distended, the mouth of the uterus being soft and dilatable. On account of the great depth of the orifice of the uterus, owing to large development of the vulva, and the inclination forwards of the body of the uterus, the dilator had to be introduced through a long Fergusson's speculum. It remained in all night, and on taking it out in the morning, the orifice of the uterus was found dilated and discharging an abundant secretion of mucus. It was found impracticable to introduce a larger dilator through the speculum, so an elastic catheter was passed about six inches into the cavity of the uterus, and ten ounces of warm water were slowly injected. The patient slept well that night, and the next day, about twenty-four hours after the injection, labour pains set in at 6 P.M. I was called at 10.30 P.M.; found the mouth of the uterus well dilated, a pouch of membrane filling the vagina; no presentation could be made out. The pains were strong and regular. The membranes did not break until 12 M., and not until the pouch had passed through the vulva, a shoulder was found, presenting the back of the fœtus to the abdomen of the mother. The feet were brought down, and the trunk was expelled by the natural efforts. There was great difficulty in delivering the head, as the deformity had evidently increased since the last labour, there being barely three inches between the projecting vertebra and the symphysis pubis, and it was not until nearly an hour after the trunk was born that the head could be extracted. The fœtus was stillborn, it was very large, weighing nearly six pounds.

"The patient made a most favourable recovery, being out of bed on the sixth day, and down stairs in ten days. The most interesting point in this case is its etiology. The complete absence of any pain, or in fact of any symptoms of disease in the displaced vertebra, together with the perfect health of the woman, precludes, I think, our ascribing it to any of the causes that have been usually considered as producing the disease, such as scrofulosis, osteomalacia, rickets, inflammation and softening of the intervertebral cartilages, etc. I believe that in this instance the displacement was caused by the rapid increase in weight of the woman during her first pregnancy, the additional strain thus thrown on the ligaments uniting the lumbar vertebræ to the sacrum being more than they would stand, and the intervertebral cartilage being probably partially absorbed, the last lumbar vertebra glided forward, thus giving rise to the deformity. The constant childbearing undoubtedly favoured its continued increase. There is one practical remark that I would make on the treatment of such cases, and it is this, that delivery should be effected whilst the patient is lying on her side, as in this position we can exert traction more readily backwards, and therefore in a more favourable position to bring the head through the highly-inclined outlet."

THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

The Forty-Third Winter Session of Lectures will commence on Monday, the 14th of October, with a General Introductory Lecture by Professor Gross. The regular lectures will begin the day after. The Session will terminate on the last day of February.

Charles D. Meigs, M. D., { Emeritus Professor of Obstetrics and Diseases of Women and Children.

Institutes of Medicine, &c., . .	by Prof. Robley Dunglison, M. D. (Dean).
General, Descriptive, and Surgical Anatomy,	by Prof. Joseph Pancoast, M. D.
Institutes and Practice of Surgery, . .	" Samuel D. Gross, M. D.
Practice of Medicine, ...	" S. Henry Dickson, M. D.
Obstetrics and Diseases of Women and Children,	" Ellerslie Wallace, M. D.
Chemistry, ...	" B. Howard Rand, M. D.
Materia Medica and General Therapeutics, .	" John B. Biddle, M. D.

Lecturer on Clinical Medicine, . . .	J. M. DaCosta, M. D.
Adjunct Professor, and Demonstrator of Anatomy,	Wm. H. Pancoast, M. D.

To enlarge still more the already abundant opportunities for Clinical Instruction, a Clinic will be held daily at the College—the Surgical department being conducted by Professors Gross and Pancoast; that of the Diseases of Women and Children by Professor Wallace; and the General Medical Clinic by Dr. J. M. DaCosta. The lectures are so arranged as to permit the student to attend the Clinics of the Pennsylvania Hospital, and the Philadelphia Hospital.

FEES.—To each Member of the Faculty—as in all the schools of Philadelphia and New York—$20, ...	$140
Graduation fee, ...	30
Matriculation fee, ...	5

At a Public Commencement, held on the 9th of March, 1867, the Degree of Doctor of Medicine was conferred on the following gentlemen by the Hon. Edward King, LL. D., President of the Institution, after which a Valedictory Address to the Graduates was delivered by Prof. Biddle.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Achuff, J. Newton	Pennsylvania.	Diagnosis.
Adams, F. A.	Maryland.	Enteric Fever.
Aikin, Perley J.	Tennessee.	Differential Diagnosis between Typhus and Typhoid Fever.
Allison, Samuel C.	Pennsylvania.	Pneumonia.
Ansley, William Bailey	Pennsylvania.	Puerperal Fever.
Armstrong, John A.	Pennsylvania.	Pneumonia.
Baker, Charles A.	Pennsylvania.	Emetics.
Baker, John Wesley	Pennsylvania.	Abortion.
Barbour, Philip C. S.	Kentucky.	Opium.
Baskerville, Charles, jr.	Mississippi.	Chloroform—Magnum Dei Donum.
Beecher, Abraham C. W.	Pennsylvania.	Hemorrhoids.
Bender, O. C.	Kansas.	Encephaloid Cancer.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Berry, Frank K.	Tennessee.	Dermology.
Bliss, D. P.	Ohio.	Cerebro-spinal Meningitis.
Bollinger, Abraham D.	Pennsylvania.	Dysentery.
Boon, Jacob	Pennsylvania.	Hypodermic Injections.
Botsford, William	New Brunswick.	Strychnia.
Bower, Gibson W.	Pennsylvania.	Parturition.
Brower, William	Pennsylvania.	Ergota.
Brown, Joseph A. C.	Missouri.	Treatment of Typhoid Fever.
Buckley, George E.	Nova Scotia.	Acute Pericarditis.
Burton, John	Indiana.	Pneumonia.
Campbell, H. F.	Pennsylvania.	Landmarks of Medicine.
Carey, John F.	Delaware.	Intermittent Fever.
Carpenter, Paul D.	New York.	Instinct and Reason.
Carroll, Robert J.	Pennsylvania.	Pneumonia.
Cassaday, Felix F.	Pennsylvania.	Rheumatism.
Clark, Charles H.	Pennsylvania.	Rheumatism.
Coble, Daniel W.	Pennsylvania.	Pemphigus.
Coe, Ira E.	New York.	Acute Pneumonia.
Cowling, Richard O.	Kentucky.	Morbid Anatomy.
Crockett, Samuel J.	New York.	Secretion.
Cunningham, J. Guy	Pennsylvania.	Acute Dysentery.
Davis, Thomas E.	Pennsylvania.	Dyspepsia.
De Lap, Hugh	Tennessee.	Abortion.
Devereaux, Robert	Pennsylvania.	Scarlatina.
Dobyns, William P.	Kentucky.	Tetanus.
Dunn, Samuel R.	Mississippi.	Principles of Diagnosis.
Earle, Willard C.	Iowa.	The Duties of the Young Physician
Earnest, John G.	Tennessee.	Puberty.
Ebaugh, William C.	Pennsylvania.	Acute Dysentery.
Elliger, Richard A. F.	Pennsylvania.	General Diagnosis of Diseases.
Embry, Gideon A.	Kentucky.	Cynanche Maligna.
Enders, F. Henry	Kentucky.	Pathology of Scrofula.
Evans, Charles R.	Pennsylvania.	Physiology of the Voice.
Faust, Jonathan N.	Pennsylvania.	Air and its Relations to Life.
Fernsler, Edwin K.	Pennsylvania.	Dysentery.
Frank, Adam	Pennsylvania.	Dermatology.
Gold, Hiram	Pennsylvania.	Ox Gall.
Graham, James	Pennsylvania.	Hemorrhage.
Graham, John	Pennsylvania.	Cathartics.
Graham, John W.	Pennsylvania.	The Gravid Uterus.
Gruel, Theodore H. E.	Germany.	Laryngoscopy.
Hall, Albon Eugene (M.D.)	Ohio.	Dysmenorrhœa.
Hall, C. Lester	Missouri.	Epilepsy.
Hall, William E.	Pennsylvania.	Acute Pleurisy.
Harris, James Walton	Mississippi.	Lacryma.
Hays, M. P.	Pennsylvania.	Cerebro-spinal Meningitis.
Hearn, William Joseph	Delaware.	Primary Syphilis.
Henderson, John D. W.	Pennsylvania.	Amenorrhœa.
Hepburn, Charles W.	Pennsylvania.	Acute Rheumatism.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Heysinger, I. W.	Pennsylvania.	The Philosophy of Hygiene.
Higgins, Richard T. (M. D.)	Illinois.	Cardiac Hypertrophy.
Hill, Henry Howard	Maryland.	Pleurisy.
Hitchner, Charles F.	New Jersey.	Scarlatina.
Hollinsworth, William R.	North Carolina.	Diphtheria.
Holston, John G. F., jr.	Ohio.	The Physician and his Patient.
Howell, William Harrison	North Carolina.	Peritonitis.
Hunsberger, William E.	Pennsylvania.	Dropsy.
Hurt, P. L.	Missouri.	Puerperal Peritonitis.
Kennedy, David	Pennsylvania.	Asthma.
King, Charles P.	Ohio.	Science of Medicine *vs.* Empiricism.
King, Robert M.	Kentucky.	Bilious Remittent Fever.
Kline, Luther B.	Pennsylvania.	Erysipelas.
Knorr, John K., jr.	Pennsylvania.	Measles.
Kretzer, Aaron A.	Maryland.	Cholera Infantum.
LeBar, Amzi	Pennsylvania.	Hepatitis.
Lee, James M.	West Virginia.	Oil of Turpentine.
Lloyd, David Corey	Pennsylvania.	Hospital Gangrene.
Lowman, Webster B.	Pennsylvania.	Diphtheria.
Lowry, Silvanus Todd	Kentucky.	Diagnosis.
Lyle, James Nathaniel	Tennessee.	Typhoid Fever.
Martin, Zachary T.	Kentucky.	Variola.
Maxwell, James A.	Kentucky.	Inflammation.
May, Vance W.	Illinois.	The Blood.
McCaa, David J.	Pennsylvania.	Specific Iritis.
McDaniel, John R.	Arkansas.	Lithotomy.
McGinley, Jeremiah	Pennsylvania.	Inflammation.
McKean, William	Ohio.	Puerperal Convulsions.
McNary, Robert B.	Kentucky.	Modern Medicine.
Mears, Juan B.	Mexico.	Pericarditis.
Meloy, Albert Parke	Pennsylvania.	Periodicity.
Miller, Joseph W.	Pennsylvania.	Pain.
Mullen, Thomas J.	Pennsylvania.	Pneumonia.
Mullin, John H.	Pennsylvania.	Varicose Ulcers.
Murray, R. J.	Pennsylvania.	Medical Deontology.
Myler, William F.	Indiana.	Milk Sickness.
Newton, John Search	Pennsylvania.	Sodæ Sulphis.
Nichols, L. C.	Kentucky.	Variola.
Oatman, James J.	Pennsylvania.	Acute Dysentery.
Ogden, P. B.	West Virginia.	Dysmenorrhœa.
Orner, Charles T.	Pennsylvania.	Puerperal Peritonitis.
Orth, William M.	Indiana.	Hemorrhage from Wounds.
Otis, Ashbel R.	New York.	Mania à Potu.
Patzki, Julius H. A.	Pennsylvania.	Proctitis Eczematosa and Intertrigo of the Infant.
Phillips, Ellis	Pennsylvania.	Secondary Hemorrhage.
Porch, Albert	New Jersey.	Vaccinia.
Porter, William T.	Pennsylvania.	Typhoid Fever.
Purviance, George	Pennsylvania.	Dysentery.

NAME.	STATE OR COUNTRY.	SUBJECT OF THESIS.
Read, Frederick B.	Pennsylvania.	Women as Practitioners of Medicine.
Reber, John W. H.	Pennsylvania.	Constitutional Peculiarities of the Fe-
Reeser, Howard S.	Pennsylvania.	Enteric Fever. [male.
Renfro, C. J.	Kentucky.	Typhoid Fever.
Rex, Oliver P.	Alabama.	Ligature.
Richards, Milton S.	Pennsylvania.	Papaver Somniferum.
Rockefeller, Irvin M.	Pennsylvania.	Treatment of Gunshot Wounds.
Rollman, William	Pennsylvania.	Post Partum Hemorrhage.
Rosser, John C.	Texas.	Malaria.
Scales, Jefferson	North Carolina.	Hydrocele.
Schmalhausen, Henry	Illinois.	Medicine.
Schmoele, William, jr.	Pennsylvania.	Circulation of the Blood.
Scruggs, A. D.	Tennessee.	Rheumatic Fever.
Sims, Richard H.	Virginia.	Pneumonia.
Smith, J. R.	North Carolina.	Injurious Effects of Tight Lacing.
Smith, James I.	Delaware.	Intermittent Fever.
Smith, Robert B.	Nova Scotia.	Diphtheria.
Sterling, William D.	Illinois.	Typhoid Fever.
Stranahan, Chester W.	Pennsylvania.	Acute Pneumonia.
Thomas, Andrew J.	Mississippi.	Primary Syphilis.
Thompson, William R.	Pennsylvania.	Scarlatina.
Treacy, Denis J.	Delaware.	Traumatic Hemorrhage.
Tredick, John, jr.	New Hampshire.	Inflammatio Cervicis Uteri.
Trent, P. G.	Virginia.	Importance of Correct Diagnosis.
Wagoner, Daniel	Indiana.	Scarlet Fever.
Wallace, Barnett	Indiana.	Death.
Watts, John S. (M. D.)	Iowa.	Intermittent Fever.
Weaver, Charles W.	Pennsylvania.	Acute Dysentery.
Weaver, Joseph K.	Pennsylvania.	Diseases of the Vocal Cords.
Weiser, George B.	Pennsylvania.	Varicose Ulcers.
Whiteley, B.	Delaware.	Tetanus.
Whitten, Thomas J.	Illinois.	Intermittent Fever.
Williams, James	Tennessee.	Pneumonia.
Williamson, Charles W.	Delaware.	Remittent Fever.
Williard, George Parker	Ohio.	Arthritic Fever.
Wilson, John T.	Maryland.	Lymph.
Wilson, Thomas	Kentucky.	Fractures.
Wilson, Walter H.	Pennsylvania.	Scorbutus.
Winlock, Joseph T.	Kentucky.	Bilious Remittent Fever.
Wolff, M. L. (M. D.)	Pennsylvania.	Delirium Tremens.
Yost, John F.	Pennsylvania.	Acute Dysentery.

Of the above there are from—Pennsylvania, 70; Kentucky, 14; Tennessee, 7; Ohio, 6; Delaware, 6; Indiana, 5; Illinois, 5; North Carolina, 4; New York, 4; Mississippi, 4; Maryland, 4; Missouri, 3; New Jersey, 2; Virginia, 2; West Virginia, 2; Iowa, 2; Nova Scotia, 2; New Hampshire, 1; Texas, 1; Arkansas, 1; Alabama, 1; Kansas, 1; New Brunswick, 1; Germany, 1; Mexico, 1. Total, 150.

BELLEVUE HOSPITAL MEDICAL COLLEGE—CITY OF NEW YORK.

SESSIONS FOR 1867-68.

The Collegiate Year in this Institution embraces a Preliminary Autumnal Term, the Regular Winter Session, and a Summer Session.

The Preliminary Autumnal Term for 1867-68, will commence on Wednesday, September 18, 1867, and continue until the opening of the Regular Session. During this term, instruction, consisting of didactic lectures on special subjects and daily clinical lectures, will be given, as heretofore, exclusively by members of the Faculty. Students designing to attend the Regular Session are strongly recommended to attend during the Preliminary term, but attendance during the latter is not required.

The Regular Session will commence on Wednesday, October 16, and end about the 1st of March, 1868.

The Summer Session for 1868 will commence on the second Wednesday in March, and continue twelve weeks. This term will embrace courses of didactic lectures by the members of the Faculty of the Summer Session, together with clinical lectures at Bellevue Hospital, and the Charity Hospital, Blackwell's Island, and the daily recitations. Lectures will also be given by members of the College Faculty.

FACULTY OF THE COLLEGE.

ISAAC E. TAYLOR, M. D., Emeritus Professor of Obstetrics and Diseases of Women and Children, President.

James R. Wood, M. D., Professor of Operative Surgery and Surgical Pathology.
Frank H. Hamilton, M.D., Professor of Military Surgery, Fractures and Dislocations, and the Principles of Surgery.
Lewis A. Sayre, M. D., Professor of Orthopedic Surgery.
Alexander B. Mott, M. D., Professor of Surgical Anatomy.
W. H. Van Buren, M. D., Professor of Diseases of the Genito-Urinary System.
George T. Elliot, M. D., } Professors of Obstetrics and the Diseases of Women
Fordyce Barker, M. D., } and Children.
Benjamin W. McCready, M. D., Professor of Materia Medica and Therapeutics.
Stephen Smith, M. D., Professor of Descriptive and Comparative Anatomy.
Austin Flint, M. D., Professor of the Principles and Practice of Medicine.
R. Ogden Doremus, M. D., Professor of Chemistry and Toxicology.
Austin Flint, Jr., M. D., Professor of Physiology and Microscopy.
William A. Hammond, M. D., Professor of Diseases of the Mind and Nervous System.
N. R. Mosely, M. D., Demonstrator of Anatomy.
J. W. Southack, Jr., M. D., Assistant Demonstrator of Anatomy.

FACULTY OF THE SUMMER SESSION.

Henry D. Noyes, M. D., Professor of Ophthalmology, and Dean of the Summer Faculty.
J. Lewis Smith, M. D., Professor of Morbid Anatomy.
Foster Swift, M. D., Professor of Diseases of the Skin.
Prof. W. H. Van Buren, M. D., Lecturer on Diseases of the Genito-Urinary System.
Prof. R. Ogden Doremus, M. D., Lecturer on Animal Chemistry.
Prof. Austin Flint, Jr., M. D., Lecturer on Microscopical Anatomy.
Prof. George T. Elliot, M. D., Lecturer on Diseases of Children.
Prof. William A. Hammond, M. D., Lecturer on Diseases of the Nervous System.

A distinctive feature of the method of instruction in this College, is the union of clinical and didactic teaching. All the lectures are given within the hospital grounds. During the Regular Winter Session, in addition to four didactic lectures on every week day, except Saturday, two or three hours are daily allotted to clinical instruction. The union of clinical and didactic teaching will also be carried out in the Summer Session; nearly all of the teachers in this Faculty being physicians and surgeons in the great Charity Hospital on Blackwell's Island.

Fees for the Regular Session.

Fees for tickets to all the lectures during the Preliminary and Regular Term, in-

BELLEVUE HOSPITAL MEDICAL COLLEGE—Continued.

cluding clinical lectures, $140.

Tickets for any of the several departments may be taken out separately.

Matriculation fee, $5.

Demonstrator's ticket (including material for dissection), $10.

Graduation fee, $30.

Students who have attended two full courses in other accredited schools, receive all the tickets for $70, exclusive of the Matriculation fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited schools, are required to matriculate only. Graduates of other accredited schools, after three years, dating from the time of graduation to the end of the term, are required to matriculate only; prior to three years they receive a general ticket for $70.

Fees for the Summer Session.

Matriculation fee (valid for the succeeding Winter Session), $5.

Fee for each of the separate courses of lectures, $10.

General ticket admitting to all the lectures, $50.

Graduates of the Bellevue Hospital Medical College will be admitted to the lectures of the Summer Session on the Matriculation ticket; all others will be required to take out tickets.

☞ The dissecting-room will be kept open until about the first of May.

Payment of fees is invariably required at the commencement of the Session. There are no exceptions to this rule.

Students, on arriving in the city, are requested to report at once at Bellevue Hospital, situated on the East River, between 26th and 28th Streets, and inquire for the Janitor of the College, who will take pains to aid them in securing comfortable accommodations, without delay.

Entrance to the Hospital is on 26th Street.

For the Annual Circular and Catalogue, giving regulations for graduation and other information, address the Secretary of the College, Professor Austin Flint, Jr., Bellevue Hospital Medical College.

For information concerning the Summer Session, address the Secretary of the College, or Prof. Henry D. Noyes, No. 68 Madison Avenue, Dean of the Summer Faculty.

FISKE MEDICAL PRIZE QUESTION.

The Trustees of the Fiske Fund, at the Annual Meeting of the Rhode Island Medical Society, held in Providence, June 5th, 1867, propose the following subjects for 1868:—

"THE LESSONS OF THE LATE WAR. IN WHAT HAS THE SCIENCE OF MEDICINE THEREBY BEEN ADVANCED?"

For the best dissertation on this subject the Trustees will pay the sum of Five Hundred Dollars.

Every competitor for a premium is expected to conform to the following regulations, viz:—

To forward to the Secretary of the Trustees, on or before the first day of May, 1868, free of all expense, a copy of his dissertation, with a motto written thereupon, and also accompanying a sealed packet, having the same motto inscribed upon the outside, and his name and place of residence within.

Previously to receiving the premium awarded, the author of the successful dissertation must transfer to the Trustees all his right, title, and interest in and to the same, for the use, benefit, and behoof of the Fiske Fund.

Letters accompanying the unsuccessful dissertations will be destroyed by the Trustees, unopened, and the dissertations may be procured by their respective authors, if application be made therefor within three months.

OTIS BULLOCK, Warren,
J. W. C. ELY, Providence,
GEO. L. COLLINS, Providence,
} *Trustees.*

S. Aug. Arnold, Providence, *Secretary of Fiske Fund Trustees.*

PHILADELPHIA SUMMER SCHOOL OF MEDICINE,

No. 920 CHESTNUT STREET, PHILADELPHIA.

ROBERT BOLLING, M. D.	EDWARD A. SMITH, M. D.
JAMES H. HUTCHINSON, M. D.	D. MURRAY CHESTON, M. D.
H. LENOX HODGE, M. D.	HORACE WILLIAMS, M. D.

The Philadelphia Summer School of Medicine will begin its third term on March 1st, 1867, and students may enjoy its privileges without cessation until October.

The regular course of *Examinations* and *Lectures* will be given during April, May, June, and September, upon

ANATOMY,	PHYSIOLOGY,
SURGERY,	OBSTETRICS,
CHEMISTRY,	MATERIA MEDICA,

PRACTICE OF MEDICINE.

The attention of the profession and of students is invited to the importance of systematic study and of clinical instruction during the summer as well as during the winter, in order to obtain a good medical education in the short time usually required, and to our plan of combining daily Recitations with Lectures and reading of Text-Books. The object of this school is to teach medicine thoroughly, and to make use of every method that is really valuable.

CLASS-ROOMS contain a cabinet of Materia Medica, Bones, Bandages, Manikins, Illustrations, Text-Books, Microscope, Chemical Reagents, etc., and in them students may study, practise bandaging, and conduct microscopical and chemical examinations.

SURGERY.—A course of Lectures will be delivered by H. Lenox Hodge, M. D., on the history, causes, symptoms, pathology, and treatment of Surgical Diseases and Injuries, and upon the employment of the Microscope, Ophthalmoscope, Otoscope, Laryngoscope, Endoscope, Percussion, Auscultation, and the Thermometer in recognizing such disorders.

PERCUSSION AND AUSCULTATION in Diseases of the Lungs and Heart will be taught by James H. Hutchinson, M. D., by Lectures, and by the Clinical Examination of patients.

MICROSCOPE.—The structure of the Microscope, and the manner of using it, will be explained, and the microscopical appearance of the tissues and fluids in health and disease will be exhibited.

URINARY DEPOSITS AND TESTS.—Students will be instructed in the microscopical and chemical examination of the urine, and will be enabled to make themselves familiar with its practical employment.

CLINICAL INSTRUCTION.

PENNSYLVANIA HOSPITAL.—The advantage of attending the Lectures, Operations, and Clinical Examinations of patients at this important hospital will be secured without charge.

EPISCOPAL HOSPITAL.—Drs. Hutchinson and Smith will take the class through its well-arranged wards, so that by the bedside disease may be readily recognized and its symptoms accurately studied.

CHILDREN'S HOSPITAL.—Much of a physician's practice being among children, it is essential that their various disorders should be seen by the student. Drs. Hodge, Hutchinson, and Cheston will, during the session, have charge of the numerous out-door and in-door patients of this establishment, and will offer every facility to the class.

DISPENSARY FOR DISEASES OF THE HEART AND LUNGS will be conducted by Dr. Hutchinson in connection with his lectures.

FEE FOR THE WHOLE COURSE . . . FIFTY DOLLARS.

Or any part may be taken separately.

OFFICE STUDENTS will be received by Drs. Bolling, Hutchinson, and Hodge, at any period of the year; they will be admitted to the Summer School and to the Winter Examinations, and Clinical Instruction will be provided for them at the Pennsylvania, Philadelphia, Episcopal, and Children's Hospitals. They will be given special instruction in the Microscope, in Practical Anatomy, in Percussion and Auscultation, and in Practical Obstetrics. They will be enabled to examine persons with diseases of the heart and lungs, to attend women in confinement, and to make microscopical and chemical examinations of the urine. The class rooms will be open for study throughout the year.

WINTER COURSE OF EXAMINATIONS will begin with the Lectures at the University of Pennsylvania in October, and will continue till the close of the session.

Candidates for admission to the Army and Navy, and those desiring promotion to a higher grade, may obtain the use of the class-rooms, and be furnished with private instruction.

Fee for Office Students (one year)	$100
Fee for one Course of Examinations	30

Class-Rooms, No. 920 Chestnut Street, Philadelphia.

Apply to H. LENOX HODGE, M. D.,
N. W. corner Ninth and Walnut Streets.

[April and July.]

COLLEGE OF PHYSICIANS AND SURGEONS.

CORNER OF TWENTY-THIRD STREET AND FOURTH AVENUE, NEW YORK.

ANNUAL ANNOUNCEMENT.—SIXTY-FIRST SESSION, 1867–68.

The Regular Course of Lectures for the Session of 1867–8 will commence on Monday, the 14th of October, 1867, and will continue until early in the following March. This course will consist of from five to six Daily Lectures in the various departments of Medicine and Surgery, both elementary and practical, together with Daily Clinical Lectures, delivered both at the College and at the larger Hospitals.

FACULTY OF MEDICINE.

EDWARD DELAFIELD, M. D., President, and Professor Emeritus of Obstetrics.
ROBERT WATTS, M. D., Professor of Anatomy.
WILLARD PARKER, M. D., Professor of the Principles and Practice of Surgery and Surgical Anatomy.
THOMAS M. MARKOE, M. D., Professor Adjunct of Surgery.
ALONZO CLARK, M. D., Professor of Pathology and Practical Medicine.
JOHN C. DALTON, M. D., Professor of Physiology and Microscopic Anatomy.
SAMUEL ST. JOHN, M. D., Professor of Chemistry.
T. GAILLARD THOMAS, M. D., Professor of Obstetrics and the Diseases of Women and Children.
JOHN T. METCALFE, M. D., Professor of Clinical Medicine.
HENRY B. SANDS, M. D., Lecturer Adjunct on Anatomy.
FREEMAN J. BUMSTEAD, M. D., Lecturer on Materia Medica and on Venereal Diseases.
ERSKINE MASON, M. D., Demonstrator of Anatomy and Curator of the College Museum.

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